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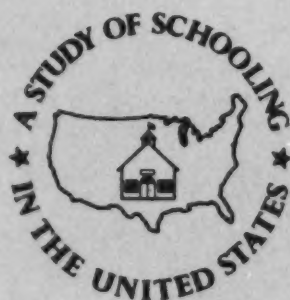
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ABSTRACT

This report contains accounts of studies, about scales to be used in the "A Study of Schooling" research project, undertaken to derive indices for constructs presumed to be measureable by composites of items. The report is introduced by a discussion on the rationale for selecting the research methodology used and an explanation of the researcher's approach to scale construction. The main analytic tools used were factor and cluster analyses, followed by internal consistency analyses to further assess the reliability and validity of resulting item dimensions. Both procedures were used to find sets (clusters or factors) of items which tend to correlate more highly within sets than between sets. The report is divided into six sections, each devoted to constructs measured in the study: (1) self-concept: upper and secondary students; (2) nationalism: upper elementary and secondary students (attitude and knowledge scales) and teachers (attitude scales); (3) educational beliefs: teachers; (4) influence: teachers; (5) organizational climate: teachers; and (6) class climate: secondary and upper elementary students. For each section, a description is presented of the development of the measurement scale and an analysis of matrices obtained from responses. Tables follow each discussion displaying internal consistency analyses, patterns that emerged from factor analyses, and correlation matrices. (JD)

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A STUDY OF SCHOOLING
Technical Report Series



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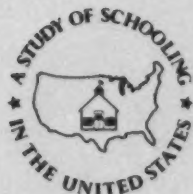
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DEVELOPMENT AND PSYCHOMETRIC ANALYSES
OF MAJOR SCALES UTILIZED IN A STUDY OF SCHOOLING

Kenneth A. Sirotnik

Technical Report No. 4

1979

A Study of Schooling is based upon the assumption that improving schools requires knowing what is happening in and around them. A comprehensive data-base of contextual information was obtained from students, teachers, administrators, parents and observers at all grade levels in thirty-eight elementary and secondary purposively sampled schools. *It is strongly recommended that readers of any technical report in this series first read Technical Report No. 1 which outlines the details, scope and limitations of the Study as a whole.*

It must be understood that this series of technical reports does not constitute the Study. Some reports are highly specific "molecular" inquiries while others take a more "molar" view across data sources, schooling levels, etc. Some reports are more methodological in nature arising out of issues in data analysis. Many of the reports quite naturally overlap in data analysed and interpretations rendered. Some authors have approached their task as consisting mostly of data description with little discussion beyond the presentation of the data. Others have ventured further into the realm of interpretation and speculation. It must be further understood that data-based inferences can and do differ among researchers who come at the data from differing points-of-view. Authors, therefore, are duly acknowledged for each report and are responsible for the material presented therein.

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Introduction

This report contains brief accountings of the scaling studies undertaken by A Study of Schooling staff in order to derive indices for a number of constructs presumed to be measureable by composites of items.*

Each section is sufficiently self-contained so as to be readable without having necessarily read other sections. (Tables and references follow each section.)

However, a general statement is in order pertaining to the multi-variate methods used in exploring the dimensionality of item sets. The main analytic tools used were factor and cluster analyses, followed by internal consistency analyses to further assess the reliability and validity of resultant item dimensions. Both of these procedures attempt to find sets (clusters or factors) of items which tend to correlate more highly within sets than between sets. It has been my experience that both methods (factor and cluster analysis) lead to similar conclusions. Cluster analysis forces one to "get into" the data and trace many of the actual item inter-correlations; it also allows the researcher to over-interpret patterns in complex matrices. Factor analysis simplifies the clustering picture by rotating the different factor solutions to simple structure; it also conceals plausible associations between variables by the analytic algorithms which

*These studies involved considerable time and effort of other staff members besides myself. In particular, Bette Overman participated heavily throughout the process of instrument development, analysis and interpretation; and Jerry Engstrom and Mitch Nides spent many hours sorting through reams of computer printouts, especially for the classroom and organizational climate items.

force the data to fit the underlying linear models. Given these advantages and disadvantages, both methods can be complementary and their use--plus the common sense of the researcher--should lead to the most sensible organization of items into scales.

Now a hard-nosed methodologist type, say a young, brash recent graduate of a top-notch research oriented behavioral science department, armed with an arsenal of multivariate weaponry, would probably take issue with me and demand two, ironically incompatible, decision-making strategies: (1) Empirical, i.e., rigorously define scales (and items composing those scales) corresponding to those dimensions best fitting the geometric space of the item associations as represented by some mathematical model, (e.g., factor analysis) and (2) Theoretical, i.e., in the event that a priori dimensions are not well represented in this geometric space, go back to the conceptual "drawing board." (I know this is a kind of "straw-person" argument, but I think it serves well as a device for expository purposes.)

His/her "theoretical" demand stems directly from a misinterpretation of the SCIENTIFIC METHOD which has somehow filtered into the behavioral sciences, almost as a reaction formation to the elusiveness of social constructs (versus physical constructs). Clearly all scientific progress has been fundamentally inductive with hypothetico-deductive argument and experimentation built into the cyclical process. Newton would have been rather amiss not to have followed up on his encounter with an apple simply because he had neglected to hypothesize the event, and its correlates, before hand. His/her other demand, quite ironically, results from an almost slavish commitment to empiricism, in spite of the prior conceptualization and substantive sortings out that invariably precede even the most exploratory of studies. Part of this dogmatism is based upon the belief in

the "law of parsimony" which goes something like "the fewer and more unrelated, the better"--hence the "objective" analytical methods of factor rotation to criteria of "simple structure." It is possible (and I think quite probable) that rigorous application of such models may be more useful in describing less complex phenomena with fundamental measurements than complex phenomena with what are essentially measurements by fiat. If only correlations among attitudinal items could be understood like those of the twenty measurements on a set of theoretical boxes in Thurstone's classic illustration of the power of factor analysis (Thurstone, 1940). What has not been programmed into any mathematical algorithm is the exploration of substantive meaning; and what comes out in any particular factor analytic rotational solution, (e.g., Kaiser Varimax rotation of factors with eigenvalues greater than or equal to one) is only one of an infinite number of empirical solutions with more or less interpretive value. Such are the limitations of algorithms, limitations which, interestingly enough, have been duly noted by the few mathematicians pioneering work in the field and largely ignored by the multitude of "canned program" practitioners. See for example, Harmon's (1967) discussion on the rationale for analytic rotational methods in factor analysis (pages 278-281) and particularly the section where he includes the following quote from Ferguson (1954):

Since factorists in dealing with the rotational problem employ an intuitive concept of parsimony, the question can be raised as to whether the term can be assigned a precise and more explicit meaning, which will enable the rotational problem to be more clearly stated and admit the possibility of a unique and objective solution. This involves explication...(which he attributes to Carnap)... the process of assigning to a vague, ill-defined, and perhaps largely intuitive concept a precise, explicit and formal meaning...p.282

In our approach to scale construction, therefore, we did not look upon the factor (or cluster) analytic results as absolute truths regarding the organization of items into distinct subsets. Instead, these results were heavily filtered through our conceptual screens which served originally for selecting (or adapting) existing items and generating new items. In effect, we were not willing to accept a high loading, content-irrelevant item nor were we willing to propose a content-relevant scale with items having low inter-correlations.

This approach to scale construction, i.e., a rational combination of information based upon empirical item associations and a priori (intuitive/conceptual) constructs necessarily resulted in correlated dimensions. We feel that striving for orthogonality is not only futile from the standpoint of replication, but also irrational in view of the fact that our conceptualizations of the dimensionality for a particular space (e.g., perceived organizational climate) are never orthogonal--our brains do not think orthogonally. To the extent that orthogonality exists, it should be discovered, not imposed.

Finally, note that some sections go a bit more in depth on certain methodological issues arising from the analysis of the data, for example, the problem of response bias in Section 1 and the unit-of-analysis problem in Section 4.

SECTION 1

Self-Concept: Upper Elementary and Secondary Students

Scale Development

During the pilot study in the fall of 1975, a 50-item form of the Coopersmith Self-Esteem Inventory (1967) was administered to approximately 190 upper elementary and 1400 secondary students in an elementary-junior-senior high school triple in Riverside, California. (The economic status of this community is roughly lower to middle class and the ethnic distribution of the families at these schools was roughly 15% Mexican-American, 78% Anglo, 5% Black and 2% other.)

The "general self," "self in relation to peers" and "self in relation to school" scale scores (as defined by Coopersmith) were computed for these student samples and items were correlated with their corresponding scales. In order to reduce the length of the inventory, six to seven items were selected to represent each of the above self concept dimensions. The selection was based upon (a) size of item-scale correlation; (b) readability across grades 4-12; and (c) the content validity of the item vis a vis the construct. In some instances, the wording of selected items was slightly revised. In several instances, new items were written. The final 19-item version used in the Study with items organized in their a priori dimensions is presented in Table 1.1 at the end of this section.

Scale Analyses: Results

From the national study conducted in the spring and fall of 1977, data are available on 1644 upper elementary students and 13,719 secondary students (7,677 high and 6,042 junior high/middle school students). Intercorrelation matrices for the 19 items were computed for the upper elementary sample, the total secondary sample, and for the high school and junior high/middle school

samples separately. (At worst, any given correlation was based on roughly 93% of the available cases due to missing responses.) Each of the four resultant matrices was both cluster and factor analyzed to see how close the empirical associations among the items corresponded to the three a priori dimensions.

Two general trends emerge which are at once both interesting and troublesome, and the interpretive dilemma which results does not appear to be substantively resolvable. (However, substantively reasonable pragmatic decisions are possible and are offered below.)

First, the "good" news: the three a priori self-concept dimensions (general, school and peer) emerge, for the most part, as empirical clusters (or factors). The rotated factor loadings (for the 3-factor orthogonal solution) are presented for each data source in Tables 1.2-1.5. (Summarizing the results of factor analysis in quantitative terms turns out to be simpler than doing the same for cluster analysis--the latter would require the presentation of the entire correlation matrix with items re-ordered by clusters.)

In each of these tables, the items are both numbered according to Table 1.1 and labeled according to their a priori scale. It should be clear that general, school and peer items load higher on their corresponding factors more often than not. In fact, the cluster analysis results suggest that even the exceptions could reasonably be placed in their a priori scales at no expense to the internal consistency of these scales. About 30% and 40% of the variance in the 19-item inventory is accounted for by the 3-factor solution for upper elementary and secondary students respectively.

The "bad" news (and most interesting news--at least to me) is this: There is a tendency for negatively worded and positively worded items to separate out into two major clusters, with the positive cluster further separating into two sub-clusters. The three resultant dimensions, of course,

are basically the general, school and peer scales. Unfortunately, the disproportionate allocation of positive and negative items to scales confounds the interpretation. Do we have a finding primarily based upon students' responses to the content of the items or upon an interaction of their personality with the way in which items are worded?

Evidence pointing to the first explanation is fairly obvious in the way items generally cluster. But four of the six "general" items are also negatively worded. Furthermore, the two positively worded "general" items are some of the exceptions to perfect clustering according to the a priori scales, loading on the "school" factor--which (with only one exception) consists of all the positively worded (5 out of 7) "school" items.* The remaining negative items ("school" #9 and "peers" #8 and #11), instead of loading only on their respective factors, load more clearly and consistently with the "general" negative items. Finally, the 4 positively worded "peers" items separate out and form a third factor.

At this point, a pragmatic compromise would seem to be in order, viz., accepting the obvious clustering of the items while both acknowledging the possibility of response style as well as the substantive utility of the emergent scales. The following scales are proposed:

<u>Scale Name</u>	<u>Item Composition</u>
General Inferiority	4,7,8,9,11,13,18
Self-confidence: Academic	2,5,12,15,17,19
Self-confidence: Peers	1,3,6,16

It should be noted that this proposal is a compromise between the several analyses of the different data sources in an effort to achieve consistent

*The one exception to the general tendency being discussed is item 2 which, of all the negatively worded items, is the most mildly worded statement and least likely to generate extreme affect.

scoring. For example, unlike the results for secondary students, item #17 contributes very little to the "school" dimension for upper elementary students. Notice also that "general" items #10 and #14 are not included. Item #14 has very low correlations with all other items and is not worth the interpretive confusion its inclusion would produce. Item #10, however, has relatively high correlations with many items, accounting for its tendency to load across factors, viz., the positive school and peer dimensions. I would be willing to defend an argument for using item #10 as a single index of "general self-confidence," notwithstanding the response style issue.

Tables 1.6-1.9 contain the results of internal consistency analyses for the three scales as defined above for the data sources considered. Although the alpha coefficients are not particularly high, they are not unreasonably low considering the few numbers of items making up each scale.

Response Style: Fact or Fiction?

In view of the positive-negative clustering tendency in our data, it might be useful to briefly review the measurement literature dealing with response bias--a literature which, in regard to this issue, is filled with controversy and is generally inconclusive.

Cronbach's 1946 article popularized the concept using the term response set to mean "any tendency causing a person consistently to make different responses to test items than he would have had the same content been presented in a different form" (p.476). This report coupled with Cronbach's summary article (1950) stimulated well over a decade of research attempting to demonstrate the existence of response sets, primarily those of social desirability and acquiescence, the former referring to the tendency to respond in the socially favorable direction and the latter referring to the tendency for persons to respond "agree," "true," "right," etc. irrespective of what the item was presumably measuring. Generally, these studies favored the hypothesis that both types of response sets existed.

In 1965, two review reports appeared, one by Block and one by Rorer, carrying a message epitomized in the title of the latter article: "The Great Response Style Myth." Rorer clarified terminology by distinguishing two basic types of response bias (the generic term): response set being the "conscious or unconscious desire on the part of a respondent to answer in such a way as to produce a certain picture of himself" (p. 133) and response style (as used by Jackson and Messick, 1958) being the "tendency to select some response category a disproportionate amount of the time independently of the item content"(p. 134). Faking bad and answering in socially desirable fashion are examples of response set; responding using scale point extremes and acquiescent responding are examples of response style. Focusing on acquiescence and finding a literature of predominantly inconsistent and generally low correlational findings, Rorer came to the conclusion that although "the list of studies purporting to find evidence of response styles in these inventories is long and varied, it is equivocal and unconvincing. The evidence that content rather than style determines responses is unequivocal and overwhelming"(p. 145).

Shortly thereafter, Rundquist (1966) responded, primarily on methodological grounds, that "response style as defined by Rorer exists, and a response style as defined by Cronbach (1946) not only exists but its neglect is a major cause for the confusion in the literature"(p. 167). Rundquist highlighted the importance of item form, i.e., the positive or negative orientation of the item, and its obvious interaction with other types of response bias, e.g., social desirability.

The methodological complexity of separating out content and response bias is further illustrated by Bentler, Jackson and Messick (1971) in their arguments opposing the sweeping statement made by Rorer. Using the agreement-acceptance acquiescence dichotomy proposed by Jackson and Messick (1965),

Bentler, et.al. (1971) logically deduced the possible response types due the interaction between acquiescence and item form, where item form was dichotomized into the polar opposite varieties ("I am happy" vs. "I am sad") and the negation varieties ("I am happy" vs. "I am not happy"). Both types of item forms have positive and negative counterparts but they are quite different grammatically and, therefore, as stimuli for responses. Coupled with agree-ment acquiescence (the tendency to say "Yes" regardless of item form) and acceptance acquiescence (the tendency to say "Yes" to all affirmatively worded items and "No" to all negated forms--or vice versa), the following interitem correlations could be predicted for a hypothetical self-description inventory (Table reproduced from Bentler, et.al., 1971):

EFFECTS OF CONTENT AND ACQUIESCENCE				
Item number	Correlation pair	Content	Acquiescence	
			Agreement	Acceptance
1, 2	Happy-Sad	-	+	+
1, 3	Happy-Not happy	-	+	-
1, 4	Happy-Not sad	+	+	-
2, 3	Sad-Not happy	+	+	-
2, 4	Sad-Not sad	-	+	+
3, 4	Not happy-Not sad	-	+	+

These authors then go on to review data from other studies tending to support the acceptance acquiescence position. And the debate is kept alive by Block (1971) in the same journal issue, who critiques the Bentler, et.al. argument...

So what does all of this have to say about our instruments. First, it is my opinion that much of the controversy in the literature is symptomatic of the difficulty (perhaps futility) of studying a "which came first" type of question using fallible measurement tools epitomized by paper-and-pencil affective inventories of complex attitudinal and emotional constructs. The controversy is highlighted by the self-serving attitudes of researchers wedded to the construct validity of personality inventories. So I have no hope of a definitive answer.

But this is no rationale for denying the interpretive difficulties. I tend to agree with Rundquist's (1966) eclectic position that responses to personality items (and I would add affective items generally) "are always the result of the interaction of item content, social desirability of this content, the form in which this content is stated, proportion of each form of statement in an inventory, response set to dissimulate, and response style (p. 177)." This leaves us nothing but an open door to continuing speculation about why our items cluster as they do. For example, I wonder if there are, indeed, non-random psychological and/or psycho-linguistic response processes which interact with item form and content such that ostensibly bipolar dimensions are split into relatively uncorrelated positive and negative counterparts. In other words, maybe some affective constructs are not always capable of being polarized, at least in the way we are trying to measure them. General self concept may be perceived as really consisting of at least two relatively uncorrelated dimensions, both of which are meaningful and, yet, appear to be "flip sides of the same coin."

This speculation is similar to the hypothesis of "acceptance acquiescence" but allows for a "50-50" split between content and response bias to explain whatever systematic psychological processes are operating. Thus, we might have reason to compute two self-concept scores; "inferiority" and "confidence," expecting that a significant number of individuals can be high (or low) on both. Dichotomizing the two scores, four types emerge:

		Confidence	
		High	Low
Inferiority	Low	A ₁	B ₁
	High	B ₂	A ₂

A-types are what we expect assuming unidimensional bipolarity combining the two constructs. Do you know any B-types?

One thing is for certain: We are not alone in our finding regarding the clustering of positive and negatively worded items. See, for example, Kokenes (1974) and the most unimaginative way in which she handled factor analytic results far more provocative than ours. I have had personal communication with other researchers who have found similar item tendencies in attitude inventories.

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Table 1.1

Self-Concept Items Organized in Their A Priori Dimensions^a

General (6)

- 4. At times I think I'm no good at all.
- 7. There are lots of things about myself I'd change if I could.
- 10. I'm pretty sure of myself.
- 13. I often wish I were someone else.
- 14. I can make up my own mind about things.
- 18. I get upset easily when I'm scolded.

In Relation to Peers (6)

- 1. I'm easy to like.
- 3. I'm popular with kids my own age.
- 6. Kids usually follow my ideas.
- 8. Most people are better liked than I am.
- 11. Kids often pick on me.
- 16. I'm a lot of fun to be with.

In Relation to School/Academic (7)

- 2. I'm not doing as well as I'd like to in school.
- 5. I am a good reader.
- 9. I often feel like giving up when I can't do my schoolwork.
- 12. I'm proud of my schoolwork.
- 15. I'm good at math.
- 17. I'm doing the best work that I can.
- 19. I am able to do schoolwork at least as well as most other students.

^a Response scales:

- 4 = Strongly agree 3 = Mildly agree 2 = Mildly disagree
1 = Strongly disagree for secondary students.
- 2 = Usually true 1 = Usually false
for upper elementary students

(Minus sign indicates item reflection for scoring purposes.)

Table 1.2

Factor Analysis of Self-Concept Items for
Upper Elementary Students (N=1644)

SORTED ROTATED FACTOR LOADINGS (PATTERN)				
		FACTOR 1	FACTOR 2	FACTOR 3
GENERAL	13	0.565	0.0	0.0
SCHOOL	9	0.557	-0.227	0.0
GENERAL	7	0.550	0.0	0.0
GENERAL	18	0.538	0.0	0.0
GENERAL	4	0.531	0.0	0.0
PEERS	11	0.458	0.0	0.0
SCHOOL	19	0.0	0.559	0.0
SCHOOL	12	0.0	0.525	0.0
SCHOOL	5	0.0	0.524	0.0
SCHOOL	15	0.0	0.504	0.0
PEERS	16	0.0	0.0	0.656
PEERS	3	0.0	0.0	0.603
PEERS	6	0.0	0.0	0.557
PEERS	1	0.0	0.357	0.534
PEERS	8	0.423	0.0	-0.453
GENERAL	14	0.0	0.312	0.0
SCHOOL	17	0.0	0.0	0.0
SCHOOL	2	0.273	-0.324	0.0
GENERAL	10	0.0	0.415	0.0
VP		2.150	2.024	1.787

The above factor loading matrix has been rearranged so that the columns appear in decreasing order of variance explained by factors. The rows have been rearranged so that for each successive factor, loadings greater than 0.4500 appear first. Loadings less than 0.2500 have been replaced by zero.

Table 1.3

Factor Analysis of Self-Concept Items for
Junior High (or Middle) School Students (N=6042)

SORTED ROTATED FACTOR LOADINGS (PATTERN)				
		FACTOR 1	FACTOR 2	FACTOR 3
GENERAL	13	0.670	0.0	0.0
GENERAL	7	0.638	0.0	0.0
GENERAL	4	0.622	0.0	0.0
PEERS	8	0.592	-0.282	0.0
SCHCCL	9	0.559	0.0	-0.341
GENERAL	18	0.465	0.0	0.0
PEERS	11	0.460	-0.333	0.0
PEERS	3	0.0	0.683	0.0
PEERS	16	0.0	0.662	0.0
PEERS	1	0.0	0.587	0.0
PEERS	6	0.0	0.563	0.0
GENERAL	10	0.0	0.470	0.378
SCHOOL	12	0.0	0.0	0.705
SCHOOL	19	0.0	0.312	0.585
SCHOOL	17	0.0	0.0	0.566
SCHOOL	15	0.0	0.0	0.334
SCHOOL	2	0.376	0.0	-0.457
SCHOOL	5	0.0	0.300	0.395
GENERAL	14	0.0	0.358	0.257
VP		2.567	2.387	2.216

The above factor loading matrix has been rearranged so that the columns appear in decreasing order of variance explained by factors. The rows have been rearranged so that for each successive factor, loadings greater than 0.4500 appear first. Loadings less than 0.2500 have been replaced by zero.

Table 1.4

Factor Analysis of Self-Concept Items for
Senior High School Students (N=7677)

SORTED ROTATED FACTOR LOADINGS (PATTERN)				
		FACTOR 1	FACTOR 2	FACTOR 3
PEERS	16	0.715	0.0	0.0
PEERS	3	0.672	0.0	0.0
PEERS	1	0.660	0.0	0.0
PEERS	6	0.601	0.0	0.0
GENERAL	10	0.507	-0.267	0.276
GENERAL	7	0.0	0.659	0.0
GENERAL	13	0.0	0.652	0.0
GENERAL	4	0.0	0.631	0.0
PEERS	8	-0.292	0.578	0.0
SCHOOL	9	0.0	0.553	-0.395
GENERAL	18	0.0	0.461	0.0
SCHOOL	12	0.0	0.0	0.750
SCHOOL	2	0.0	0.265	-0.585
SCHOOL	17	0.0	0.0	0.581
SCHOOL	19	0.319	0.0	0.555
SCHOOL	15	0.0	0.0	0.477
GENERAL	14	0.383	0.0	0.0
PEERS	11	-0.266	0.449	0.0
SCHOOL	5	0.350	0.0	0.305
VP		2.637	2.526	2.174

The above factor loading matrix has been rearranged so that the columns appear in decreasing order of variance explained by factors. The rows have been rearranged so that for each successive factor, loadings greater than 0.4500 appear first. Loadings less than 0.2500 have been replaced by zero.

Table 1.5

Factor Analysis of Self-Concept Items for
All Secondary Students (N=13,719)

SORTED ROTATED FACTOR LOADINGS (PATTERN)				
		FACTOR 1	FACTOR 2	FACTOR 3
GENERAL	13	0.669	0.0	0.0
GENERAL	7	0.651	0.0	0.0
GENERAL	4	0.627	0.0	0.0
PEERS	8	0.555	-0.279	0.0
SCHOOL	9	0.558	0.0	-0.366
GENERAL	18	0.480	0.0	0.0
PEERS	11	0.476	-0.299	0.0
PEERS	16	0.0	0.693	0.0
PEERS	3	0.0	0.666	0.0
PEERS	1	0.0	0.628	0.0
PEERS	6	0.0	0.593	0.0
GENERAL	10	0.0	0.535	0.315
SCHOOL	12	0.0	0.0	0.725
SCHOOL	17	0.0	0.0	0.584
SCHOOL	19	0.0	0.343	0.551
SCHOOL	2	0.308	0.0	-0.545
SCHOOL	15	0.0	0.0	0.522
SCHOOL	5	0.0	0.348	0.329
GENERAL	14	0.0	0.395	0.0
VP		2.574	2.576	2.167

The above factor loading matrix has been rearranged so that the columns appear in decreasing order of variance explained by factors. The rows have been rearranged so that for each successive factor, loadings greater than 0.4500 appear first. Loadings less than 0.2500 have been replaced by zero.

Table 1.6

Internal Consistency Analysis of Self-Concept Items
For Upper Elementary Students (N=1526)

	<u>Item Number</u>	<u>Corrected Item - Total Correlation *</u>	<u>Alpha If Item Deleted</u>
GENERAL	4	.35	.59
8-item Alpha: .63	7	.32	.60
	8	.32	.60
	9	.36	.59
	10	.28	.61
	11	.32	.60
	13	.37	.59
	18	.28	.61
PEERS			
4-item Alpha: .50	1	.28	.44
	3	.30	.43
	6	.22	.51
	16	.40	.34
ACADEMIC			
6-item Alpha: .54	2	.29	.49
	5	.29	.49
	12	.37	.45
	15	.31	.48
	17	.11	.55
	19	.31	.48

* This is the correlation between the students' scores on the indicated item and their total scale scores based on the remaining items in the scale.

Table 1.7

Internal Consistency Analysis of Self-Concept Items
For Junior High/Middle School Students (N=5124)

	<u>Item Number</u>	<u>Corrected Item - Total Correlation</u>	<u>Alpha If Item Deleted</u>
GENERAL	4	.47	.64
8-item Alpha: .69	7	.40	.66
	8	.43	.65
	9	.40	.66
	10	.19	.70
	11	.34	.67
	13	.52	.63
	18	.29	.68
PEERS			
4-item Alpha: .61	1	.38	.56
	3	.44	.51
	6	.33	.59
	16	.45	.51
ACADEMIC			
6-item Alpha: .61	2	.28	.60
	5	.27	.60
	12	.49	.51
	15	.33	.57
	17	.28	.59
	19	.44	.53

Table 1.8

**Internal Consistency Analysis of Self-Concept Items
For Senior High School Students (N=6825)**

	<u>Item Number</u>	<u>Corrected Item - Total Correlation</u>	<u>Alpha If Item Deleted</u>
GENERAL	4	.48	.66
8-item Alpha: .71	7	.44	.67
	8	.43	.68
	9	.44	.67
	10	.34	.69
	11	.33	.70
	13	.50	.66
	18	.25	.71
 PEERS			
4-item Alpha: .67	1	.46	.60
	3	.48	.59
	6	.38	.66
	16	.50	.57
 ACADEMIC			
6-item Alpha: .59	2	.33	.54
	5	.21	.59
	12	.54	.46
	15	.25	.58
	17	.27	.57
	19	.41	.52

Table 1.9

Internal Consistency Analysis of Self-Concept Items
For All Secondary Students (N=11,949)

	<u>Item Number</u>	<u>Corrected Item - Total Correlation</u>	<u>Alpha If Item Deleted</u>
GENERAL			
8-item Alpha: .71	4	.48	.66
	7	.43	.67
	8	.44	.67
	9	.42	.67
	10	.27	.70
	11	.35	.69
	13	.52	.65
	18	.27	.71
PEERS			
4-item Alpha: .65	1	.42	.58
	3	.46	.55
	6	.36	.62
	16	.48	.54
ACADEMIC			
6-item Alpha: .61	2	.31	.57
	5	.24	.60
	12	.52	.48
	15	.29	.58
	17	.28	.58
	19	.42	.53

SECTION 2

Nationalism: Upper Elementary and Secondary Students (Attitude and Knowledge) and Teachers (Attitude)

Scale Development

Meeting both the purposes of a dissertation study and the development of the global education component early on in the Study of Schooling, Schmidt (1975) developed two instruments designed to assess fourth, fifth and sixth grade students' understanding of and attitudes toward the global system.

Based upon literature reviews, interviews with upper elementary school children, Anderson's typology of curriculum objectives proposed for global education (Becker & Anderson, 1969), and successive content revisions of large item pools, 50 cognitive ("global knowledge" items) and 45 affective ("global attitude" items) were culled for pretesting. (Each set of items was organized around three major a priori cognitive and affective sub-dimensions.)

557 upper elementary students from 5 elementary schools in the Los Angeles area were selected for pre-testing. They came from low to middle economic status families; racial/ethnic composition was roughly 20% black, 30% brown, and 50% white. After extensive item analysis and factor analysis of the cognitive items, it was concluded that the items had no empirically supported dimensions and that a single score based upon a subset of 44 items best represented a common factor of "global knowledge." Similar analyses of the affective items yielded four interpretable dimensions defined by a subset of 40 items, the strongest of which was labeled "political chauvinism." The second largest factor was labeled "global-mindedness." Upon inspection, the

items defining each scale seemed quite similar reflecting one or the other extreme on a scale of "national-centrism." Yet, the "chauvinistically" worded and "global mindedly" worded items separated out into two clusters, much as we have found with our other attitudinal instruments (see Section 1).

For the purposes of the pilot study in the fall of 1975, the items developed by Schmidt (1975) were reviewed in terms of both statistical and substantive properties. Eighteen items were selected or adapted from the attitudinal set and were primarily "nationalistic" in affect tone. Given the evidence for reading difficulty found by Schmidt, a parallel set of items using more simple wording was developed for upper elementary students. Following a similar procedure, about 30 cognitive items were selected and modified accordingly for secondary and upper elementary students. Finally, it was decided to use the secondary attitude items as a "national" scale for teachers as well. (It might be noted that a second device was also used to try to tap into the affective component of global mindedness, viz., a semantic differential using countries as concepts and primarily evaluative scales.)

Using the results and experience gained in the Riverside pilot study, final selection, modification and rewriting of items were based upon a) the item-scale intercorrelations b) the readability and the desire to have comparable instruments for both upper elementary and secondary students and c) a reassessment of the content validity of each item. A fairly subjective application of these considerations finally resulted in a 10-item "global attitude" scale for both upper elementary and secondary students (Table 2.1), an upper elementary and a secondary form of a "global knowledge" scale (Tables 2.2 and 2.3), and a 10-item "global attitude" scale for teachers (Table 2.4). (The items for teachers represented what appeared to be the most salient concepts in the student form; several were adapted from this form, but most were written anew.)

Scale Analyses: Results

From the national study conducted in the spring and fall of 1977, data are available on 1644 upper elementary students, 13,719 secondary students (7,677 high and 5,042 junior high or middle school students), and 1350 teachers (664 high, 400 junior high/middle, and 286 elementary school teachers). In view of the small number of items in each scale and the way in which the scales were developed, viz., primarily as unidimensional measures of "nationalism" or "knowledge" and culled, in part, from previous factor analytic work, we decided to bypass cluster and factor analysis of items and move directly to the usual item analysis procedures of computing item-scale correlations and alpha coefficients of internal consistency. After appropriate scoring reversals of the items, an internally consistent scale should have positive and substantial correlations with each of its items. Coefficient alpha, used as an index of this scale property, is essentially a ratio of the amount of covariation in the items to the total variation in the scale--in effect, this represents the extent to which items are intercorrelated.

In order to facilitate data processing with the SPSS canned reliability program, the internal consistency analysis for each scale was based upon only those respondents who answered all the items of that scale. This resulted in sub-samples representing roughly 80%, 95% and 90%, respectively, of the total samples of secondary students, upper elementary students and teachers.

Tables 2.5 - 2.7 present the internal consistency analyses for the attitude scales for students and teachers and Tables 2.8 and 2.9 present the same for the student scales of "global knowledge." Three general trends are evident and are not surprising.

1. All (or all but one) of the items in any scale contribute positively to the internal consistency of the scale.
(We chose many of these items based upon their correlations with scale scores computed in the pilot study.)

2. Upper elementary students evidence lower alpha coefficients than secondary students. (Our experience in the field has indicated that the younger children have more difficulty with the reading and comprehension of the cognitive and affective items.)
3. The alphas for the attitude scales are lower than those for the knowledge scales. (Low level cognitive (factual) items, leaving less room for interpretation, are usually responded to more consistently than are attitudinal items, open for more complex interpretations and heterogeneity in inter-item relationships.)

Attending more specifically to each scale, it can be seen that

1. Eliminating item 1 from the student attitude scale contributes to an increase in the alphas for the resultant 9-item scale (especially for the junior high/middle school students).
2. Coincidentally (I think), eliminating the first item from the teacher attitude scale also results in a slight increase in alpha coefficient for the remaining items.
3. No appreciable increase can be obtained for the global knowledge scales by deleting any items. However, substantive rationale is considerably clarified by deleting "Latin American" items 2 and 3 from upper elementary and secondary forms, resulting in no (or negligible) change in alphas.

It is, therefore, proposed that the above scoring adjustments be made for the student and teacher affective scales and that the cognitive scales for students remain intact.

Table 2.10 presents the correlations between the 9-item attitude scale and 12-item knowledge scale for upper elementary and secondary students. These correlations verify the relationship found repeatedly by Schmidt (1975) and, again in the Riverside pilot study, viz., the more "nationalistic" the student's attitude, the less the student knows about global issues.

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Table 2.1

Attitude ("Nationalism") Scale for Students^a

- 1. Helping other countries is a good way to use our money.
- 2. America is so great that it can solve all of the world's problems by itself.
- 3. The greatest danger to America comes from foreign ideas and countries.
- 4. A country where people have too many children should not receive food or aid from the United States.
- 5. I think the American people are the best in the world.
- 6. Schools should not waste time teaching about other countries and peoples.
- 7. The United States should share its food with other countries.
- 8. People from foreign countries should be prevented from living in the United States.
- 9. Schools should teach students that our country is the best in the world.
- 10. Talking things over with another country is better than fighting.

^a Response scales:

4=Strongly agree 3=Mildly agree 2=Mildly disagree 1=Strongly disagree
for secondary students

2=Yes 1=No
for upper elementary students

(Minus sign indicates item reflection for scoring purposes.)

Table 2.2

Upper Elementary Student Form of the Global Knowledge Scale

1. To work for peace in the world, most countries belong to the:

☐ United Fund
☐ United States
☐ United Nations
☐ United Kingdom
☐ I do not know

2. The languages spoken by most people in Latin America are:

☐ Japanese and Chinese
☐ German and Russian
☐ French and English
☐ Spanish and Portuguese
☐ I do not know

3. When two or more countries have the same size army and navy, it is called:

☐ Balance of power
☐ A treaty
☐ Freedom
☐ Trade
☐ I do not know

4. Outer space belongs to:

☐ Russia
☐ China
☐ The United States
☐ The people of the world
☐ I do not know

5. A very important problem in our world today is that:

☐ There is too much food
☐ There is too much land
☐ There are too many people
☐ There are too many doctors
☐ I do not know

6. Latin America is:

☐ A large country
☐ A part of the United States
☐ An island
☐ A group of countries south of the United States
☐ I do not know

7. The planet closest to the sun is:

☐ Mercury
☐ Earth
☐ Moon
☐ Mars
☐ I do not know

8. An agreement between two countries might be called:

☐ Trade
☐ Balance of power
☐ A treaty
☐ A passport
☐ I do not know

9. All groups of people in the world have a:

☐ School system
☐ Language
☐ President
☐ Television network
☐ I do not know

10. The earth is like other planets because:

☐ It has trees
☐ It goes around a sun
☐ It goes around a moon
☐ It has water
☐ I do not know

11. People who live in the United States might speak:

☐ English
☐ Spanish
☐ Japanese
☐ Any of the above
☐ I do not know

12. The exchange of products (like coal, oil, or wheat) between countries is called:

☐ A treaty
☐ Trade
☐ A passport
☐ Freedom
☐ I do not know

Table 2.3

Secondary Student Form of the Global Knowledge Scale

1. When two or more nations have the same military capability, it is called:

- ☐ An alliance
- ☐ Free trade
- ☐ Prosperity
- ☐ Balance of power
- ☐ I do not know

2. To work for peace in the world, most countries belong to the:

- ☐ United Fund
- ☐ United States
- ☐ United Nations
- ☐ United Kingdom
- ☐ I do not know

3. Other countries depend most on Latin America for:

- ☐ Televisions and radios
- ☐ Cars and trucks
- ☐ Corn and wheat
- ☐ Coffee and sugar
- ☐ I do not know

4. In which of the following nations is the population most rapidly outgrowing the supplies of food, clothing and shelter?

- ☐ Japan
- ☐ Mexico
- ☐ Canada
- ☐ India
- ☐ I do not know

5. The movement of people from rural areas to the city is called:

- ☐ Mobilization
- ☐ Industrialization
- ☐ Urbanization
- ☐ Mechanization
- ☐ I do not know

6. When countries give up their guns and weapons, it is called:

- ☐ A treaty
- ☐ Disarmament
- ☐ Freedom
- ☐ Balance of power
- ☐ I do not know

7. The United Nations:

- ☐ Discusses world problems
- ☐ Controls international trade
- ☐ Governs all people on our planet
- ☐ Is a part of America's government
- ☐ I do not know

8. A partnership between two or more countries is called:

- ☐ A passport
- ☐ An alliance
- ☐ Literacy
- ☐ Free trade
- ☐ I do not know

9. Latin America is:

- ☐ A large country
- ☐ A group of countries south of the United States
- ☐ An island
- ☐ A part of the United States
- ☐ I do not know

10. Over half of the world's population is located in:

- ☐ Asia
- ☐ Europe
- ☐ Africa
- ☐ The United States
- ☐ I do not know

11. People who live in the United States might speak:

- ☐ English
- ☐ Spanish
- ☐ Japanese
- ☐ Any of the above
- ☐ I do not know

12. An agreement between two countries might be called:

- ☐ Free trade
- ☐ Balance of power
- ☐ A treaty
- ☐ A passport
- ☐ I do not know

Table 2.4

Global Attitude Scale for Teachers ^a

- 1. It is important that every child have the opportunity to study and learn about the political and economic systems of other countries
- 2. Schools should offer classes that will help students develop positive attitudes toward people from other countries
- 3. Schools should teach students to place world citizenship ahead of national citizenship . . .
- 4. Schools are not placing enough emphasis on patriotism and respect for the flag
- 5. Our country should not cooperate in any international trade agreements which attempt to better world economic conditions at our expense
- 6. The United States is closer to being ideal than any other country has ever been
- 7. A populous country should not receive food or aid from the United States until it can prove that it is working toward the control of its birthrate
- 8. The immigration of foreigners to this country should be kept down so that we can provide for Americans first.
- 9. If necessary, we ought to be willing to lower our standard of living to cooperate with other countries in getting an equal standard of living for every person in the world . . .
- 10. It would be better to be a citizen of the world than of any particular country

^a Response scales:

4=Strongly agree 3=Mildly agree 2=Mildly disagree 1=Strongly disagree
for secondary students

(Minus sign indicates item reflection for scoring purposes.)

Table 2.5

Internal Consistency Analysis of Attitude Items
for Upper Elementary Students (N=1549)

<u>Item Number^a</u>	<u>Corrected Item-Total Correlation^b</u>	<u>Alpha If Item Deleted</u>
1	.06	.54
2	.26	.49
3	.12	.53
4	.24	.49
5	.27	.49
6	.20	.51
7	.19	.51
8	.31	.47
9	.37	.45
10	.23	.50

10-Item Alpha: .53

a Item numbers 7-10 do not correspond with those in questionnaire booklet; refer to Table 2.1 for appropriate item content.

b This is the correlation between the students' scores on the indicated item and their total scale scores based on the remaining (9) items.

Table 2.6

Internal Consistency Analysis of Attitude Items
for High School (N=6608) and Junior High/Middle School (N=4552) Students

Item Number	High School Students		Jr. High/Middle School Students	
	Corrected Item-Total Correlation	Alpha If Item Deleted	Corrected Item-Total Correlation	Alpha If Item Deleted
1	.13	.67	-.00	.71
2	.25	.64	.35	.65
3	.31	.63	.31	.65
4	.43	.60	.47	.62
5	.31	.63	.35	.65
6	.40	.61	.45	.63
7	.25	.64	.17	.68
8	.45	.60	.50	.61
9	.43	.61	.49	.62
10	.22	.65	.24	.67
10-Item Alpha: .65			.67	

Table 2.7

Internal Consistency Analyses of Attitude Items
for Senior High (N=610), Junior High/Middle (N=357)
and Elementary (N=253) School Teachers

Item Number	High School Teachers		Junior High/Middle School Teachers		Elementary School Teachers	
	Corrected Item-Total Correlation	Alpha If Item Deleted	Corrected Item-Total Correlation	Alpha If Item Deleted	Corrected Item-Total Correlation	Alpha If Item Deleted
1	.17	.70	.11	.70	.12	.67
2	.31	.69	.25	.68	.19	.66
3	.48	.66	.47	.64	.47	.60
4	.42	.67	.33	.67	.33	.64
5	.40	.67	.32	.67	.33	.64
6	.28	.69	.25	.69	.26	.65
7	.16	.72	.28	.68	.26	.65
8	.40	.67	.44	.65	.37	.63
9	.48	.65	.45	.65	.37	.63
10	.48	.65	.56	.62	.47	.60
10-Item Alpha: .70			.69		.66	

Table 2.8

Internal Consistency Analysis of Global Knowledge Items
for High School (N=6600) and Junior High/Middle School (N=4469) Students

Item Number	High School Students		Jr. High/Middle School Students	
	<u>Corrected Item-Total Correlation</u>	<u>Alpha If Item Deleted</u>	<u>Corrected Item-Total Correlation</u>	<u>Alpha If Item Deleted</u>
1	.56	.84	.53	.81
2	.59	.83	.55	.81
3	.57	.84	.47	.82
4	.41	.85	.40	.82
5	.52	.84	.49	.82
6	.59	.83	.55	.81
7	.60	.83	.56	.81
8	.59	.83	.54	.81
9	.54	.84	.47	.82
10	.47	.84	.44	.82
11	.29	.85	.30	.83
12	.54	.84	.54	.81
12-Item Alpha: .85			.83	

Table 2.9

Internal Consistency Analysis of Global Knowledge Items
for Upper Elementary Students (N=1573)

<u>Item Number</u>	<u>Corrected Item-Total Correlation</u>	<u>Alpha If Item Deleted</u>
1	.37	.72
2	.18	.74
3	.44	.71
4	.37	.72
5	.37	.72
6	.20	.74
7	.38	.72
8	.46	.71
9	.42	.71
10	.45	.71
11	.25	.73
12	.50	.70

12-Item Alpha:

.74

Table 2.10

Correlations Between Knowledge and Attitude
for Upper Elementary and Secondary Students

<u>Student Sample</u>	<u>Correlations</u>	<u>N of Cases</u>
Upper Elementary	-.42	1615
Secondary:		
Junior High/Middle	-.29	4633
Senior High	-.24	6793

SECTION 3

Educational Beliefs: Teachers

Scale Development

The current 17-item version of the "education beliefs" inventory was the result of a factor analysis of 36 original items dealing with six presumed categories of ideological orientations. This set of items was selected and/or adapted from Wehling and Charters (1969) and Coughlan (1969) by Bishop (1972) for use in his doctoral study concerning the relationships among organization work context (predominantly cooperative or team taught vs. self-contained vs. mixed), informal organization (sociometric friendship and work-relevant patterns), and teaching ideologies or beliefs. Data were obtained from the teachers at 24 elementary schools: 12 of these schools were members of the League of Cooperating Schools involved in the /I/D/E/A/ SECSI Project (Bentzen, 1974) and 12 were matched non-league schools sampled from corresponding school districts in California.

The results of the factor analysis included a reasonably clear delineation of the three ideological sub-scales which we have included in the Study of Schooling. (See Table 3.1). It might be noted that Bishop found the "education beliefs" scales to vary with organizational context (the more "traditional" the beliefs, the more "traditional" the organization, i.e., the more self-contained, non-cooperative the teaching arrangements). However, no relationships between beliefs and informal work patterns were uncovered.

The data obtained from the Riverside pilot study in the fall of 1975 were not used for revision purposes; thus, the 17-item scale as it was originally used by IDEA was used again in A Study of Schooling.

Scale Analyses: Results

From the national study conducted in the spring and fall of 1977, data are available on 664 high school teachers, 400 junior high (or middle) school teachers, and 286 elementary school teachers. Intercorrelation matrices for the 21 items (the original 17 items plus 4 "filler" items) were computed for the teachers at each schooling level separately; and the correlation matrix for all 1350 teachers was also computed. (At worst, any given correlation was based on roughly 96% of the available cases due to missing responses.)

Each of the four resultant matrices was both cluster and factor analyzed to see the extent to which the empirical associations among the items corresponded to the three originally derived dimensions.

Two general trends emerge which are at once both interesting and troublesome...where have you read that before? You guessed it: the same kind of clustering of positively and negatively worded items we found for student self-concept is happening (even more definitively) for the teacher educational beliefs items--except, instead of positive and negative item forms, we now have "traditionally" and "non-traditionally" worded items.

Without exception and regardless of sample (total teachers or teachers separately by schooling level), all 10 traditionally worded items fall into one main cluster and all 7 non-traditionally worded items fall into the other main cluster. (Even the one traditional and three non-traditional "filler" items sort themselves out accordingly.) Table 3.2 presents the results of a factor analysis for all teachers rotating two factors (accounting for approximately 30% of the total variance in all 21-items). The above pattern is unmistakable. Unfortunately, as discussed in Section 1, we have again confounded response style and content interpretations of this

result since 5 out of 6 "pupil participation" items are non-traditionally worded and 4 out of 5 items in each of the other two original scales ("discipline and control" and "instructional goals") are traditionally worded.

Notwithstanding this overall finding, inspection of the subclustering reveals the tendency for all three original scales to separate out. Tables 3.3 - 3.6 present the factor analytic results for 3-factor rotations (accounting for approximately 37% of the variance) of the elementary, junior high, senior high and total teacher samples respectively. The tendency for instructional goal and discipline-control items to separate out is especially clear for the junior high teachers, somewhat evident for the high school teachers and only hinted at for elementary school teachers. (For elementary teachers, the third factor seems to be better defined by "filler" items 4 and 7--a fortuitous pair which I shall return to later.)

As usual, a pragmatic compromise is suggested, relying on the general clustering tendencies while acknowledging the possibility of response style processes and the minor differences in factor patterns between schooling levels:*

<u>Scale Name</u>	<u>Item Composition</u>
Teacher Discipline & Control	1,5,8,11,16,18,20
Student Participation	10,12,13,15,21
Basic Subjects & Skills	6,17,19

It should be noted that:

1. Item 9 has been deleted due to its substantive and empirical ambiguity.
2. Item 1 (originally a "student participation" item) has been placed in the "Discipline-Control" scale; inspection of its content reveals why; inspection of the factor analyses confirms this revelation.
3. Item 3 is deleted from the "basic subjects and skills" dimension

*Alternatively, we can retain the two primary clusters, traditional and non-traditional beliefs. See Wright (1980) for further results taking this approach.

due to its inconsistent loading patterns. (Alpha is also increased for this scale when this item is deleted.)

4. Item 17 has been left in the "Basic Subjects & Skills" (formerly "instructional goals") scale, even though it loads higher on the "Discipline-Control" scale in 2 out of the 3 separate sample factor analyses. (The junior high analysis is the exception.) Inspection of the item's content does reveal a control aspect (the exercise of "independent thought"); but given the item's other empirical associations, it didn't seem worth confounding its primary substantive focus.

Tables 3.7 - 3.9 contain the results of internal consistency analyses for the three scales as defined above for the data sources considered.

Table 3.10 shows the resultant scale intercorrelations--moderate and in the expected directions--but low enough so as to render it sensible to use the scales separately.

Finally, there is some tendency (especially for elementary teachers) for the so-called "filler" items to form a cluster primarily defined by items 4 and 7. Table 3.11 presents a 4-factor rotation (accounting for approximately 42% of the total variance) for the total teacher sample supporting this tendency. The serendipitous result is a teacher beliefs scale ("Concern for Students") which is our only teacher-based parallel to the "Teacher Concern" dimension in our student-based perceptions of classroom climate. I would propose, therefore, retaining a score for each teacher based on these 2 items and see what it does for us in our correlational pursuits.

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Table 3.1

Teacher Beliefs Items Organized in Their Original Dimensions

Student Participation (6)

- 1. Good teacher-student relations are enhanced when it is clear that the teacher, not the students, is in charge of classroom activities.
- 10. Student initiation and participation in planning classroom activities are essential to the maintenance of an effective classroom atmosphere.
- 12. When students are allowed to participate in the choice of activities, discipline problems are generally averted.
- 13. When given a choice of activities, most students select what is best for them.
- 15. Student motivation is greatest when students can gauge their own progress rather than depending on regular evaluation by the teacher.
- 21. Students are motivated to do better work when they feel free to move around the room while class is in session.

Discipline and Control (6)

- 5. There is too great an emphasis on keeping order in most classrooms.
- 8. An orderly classroom is the major prerequisite to effective learning.
- 11. Students must be kept busy or they soon get into trouble.
- 16. Students need and should have more supervision than they usually get.
- 18. In the interest of good discipline, students who repeatedly disrupt the class must be firmly punished.
- 20. Proper control of a class is amply demonstrated when the students work quietly while the teacher is out of the room.

Instructional Goals (5)

- 3. The learning of basic facts is less important in schooling than acquiring the ability to synthesize facts and ideas into a broader perspective.
- 6. Learning is essentially a process of increasing one's store of information about the various basic fields of knowledge.
- 9. Effective learning depends primarily upon the use of adequate instructional techniques and resources.
- 17. Before students are encouraged to exercise independent thought they should be thoroughly grounded in facts and knowledge about basic subjects.
- 19. The teaching of basic skills and subject matter is the most important function of the school.

Filler Items (4)

- 2. As long as they have control over teaching in their own classrooms, it is not necessary for teachers to have a voice in school administrative affairs.
- 4. Learning is enhanced when teachers praise generously the accomplishments of individual students.
- 7. The best learning atmosphere is created when the teacher takes an active interest in the problems and affairs of students.
- 11. In planning their work, teachers should rely heavily on the knowledge and skills students have acquired outside the classroom.

Table 3.2

2-Factor Analysis of Educational
Beliefs Items Over All Teachers (N=1350)

SORTED ROTATED FACTOR LOADINGS (PATTERN)

		FACTOR 1	FACTOR 2
DISCON	8	0.660	0.0
INSGOAL	17	0.603	0.0
DISCON	18	0.596	0.0
DISCON	20	0.576	0.0
INSGOAL	15	0.569	0.0
DISCON	11	0.565	0.0
INSGOAL	6	0.540	0.0
PUPPART	1	0.527	0.0
DISCON	16	0.490	0.0
INSGOAL	9	0.483	0.285
PUPPART	10	0.0	0.705
PUPPART	12	0.0	0.692
PUPPART	13	0.0	0.629
PUPPART	15	0.0	0.544
PUPPART	21	0.0	0.514
FILLER	14	0.0	0.466
FILLER	7	0.0	0.463
INSGOAL	3	0.0	0.0
DISCON	5	-0.329	0.364
FILLER	4	0.0	0.290
FILLER	2	0.0	0.0
VP		3.478	2.848

The above factor loading matrix has been rearranged so that the columns appear in decreasing order of variance explained by factors. The rows have been rearranged so that for each successive factor, loadings greater than 0.4500 appear first. Loadings less than 0.2500 have been replaced by zero. (All tables will be arranged similarly.)

Table 3.3

3-Factor Analysis of Educational
Beliefs Items for Elementary Teachers (N=286)

SORTED ROTATED FACTOR LOADINGS (PATTERN)

		FACTOR 1	FACTOR 2	FACTOR 3
INSGOAL	17	0.664	0.0	0.0
DISCON	8	0.593	-0.280	0.332
DISCON	20	0.589	0.0	0.0
DISCON	18	0.565	0.0	0.0
INSGOAL	19	0.555	-0.281	0.0
DISCON	16	0.541	0.0	0.0
DISCON	11	0.510	0.0	0.354
PUPPART	15	0.0	0.715	0.0
FILLER	14	0.0	0.620	0.0
PUPPART	13	0.0	0.572	0.298
PUPPART	10	0.0	0.522	0.487
INSGOAL	3	0.0	0.512	0.0
FILLER	7	0.0	0.0	0.590
FILLER	4	0.0	0.0	0.582
FILLER	2	0.302	0.0	0.0
INSGOAL	5	0.449	0.0	0.410
PUPPART	1	0.412	-0.321	0.0
INSGOAL	9	0.430	0.0	0.438
DISCON	5	-0.253	0.372	0.0
PUPPART	12	0.0	0.440	0.413
PUPPART	21	-0.262	0.377	0.265
VP		3.221	2.420	1.963

Table 3.4

3-Factor Analysis of Educational Beliefs
Items for Junior High (or Middle) Teachers (N=400)

SCRTED ROTATED FACTOR LOADINGS (PATTERN)

		FACTOR 1	FACTOR 2	FACTOR 3
PUPPART	12	0.738	0.0	0.0
PUPPART	10	0.719	0.0	0.0
PUPPART	13	0.572	0.0	0.0
PUPPART	15	0.561	0.0	-0.252
PUPPART	21	0.471	-0.290	0.0
DISCON	8	0.0	0.652	0.0
DISCON	16	0.0	0.571	0.0
PUPPART	1	0.0	0.561	0.0
DISCON	11	0.0	0.549	0.0
DISCON	18	0.0	0.548	0.0
INSGOAL	19	0.0	0.0	0.673
INSGOAL	6	0.256	0.0	0.649
INSGOAL	3	0.270	0.0	-0.573
INSGOAL	17	0.0	0.347	0.503
FILLER	4	0.262	0.295	0.0
FILLER	7	0.434	0.303	0.0
FILLER	14	0.411	0.0	-0.282
FILLER	2	0.0	0.0	0.267
INSGOAL	9	0.387	0.320	0.345
DISCON	20	0.0	0.386	0.371
DISCON	5	0.384	-0.319	0.0
VP		2.919	2.266	2.121

Table 3.5

3-Factor Analysis of Educational Beliefs
Items for Senior High Teachers (N=664)

Sorted Rotated Factor Loadings (Pattern)

		FACTOR 1	FACTOR 2	FACTOR 3
DISCON	8	0.693	0.0	0.0
DISCON	18	0.655	0.0	0.0
DISCON	20	0.608	0.0	0.0
INSGOAL	17	0.599	0.0	-0.272
INSGOAL	19	0.572	0.0	-0.257
DISCON	11	0.548	0.0	0.0
PUPPART	1	0.547	0.0	0.0
DISCON	16	0.540	0.0	0.0
INSGOAL	6	0.484	0.0	-0.463
INSGOAL	9	0.456	0.0	0.0
PUPPART	12	0.0	0.700	0.0
PUPPART	13	0.0	0.686	0.0
PUPPART	10	0.0	0.682	0.0
PUPPART	21	0.0	0.564	0.0
FILLER	14	0.0	0.468	0.0
PUPPART	15	0.0	0.459	0.292
FILLER	4	0.0	0.0	0.615
INSGOAL	3	0.0	0.0	0.545
DISCON	5	-0.407	0.416	0.0
FILLER	2	0.253	0.0	-0.255
FILLER	7	0.0	0.418	0.255
VP		3.657	2.756	1.420

Table 3.6

3-Factor Analysis of Educational Beliefs
Items Over All Teachers (N=1350)

SORTED ROTATED FACTOR LOADINGS (PATTERN)

		FACTOR 1	FACTOR 2	FACTOR 3
DISCON	8	0.692	0.0	0.0
DISCON	18	0.626	0.0	0.0
DISCON	11	0.569	0.0	0.0
PUPPART	1	0.561	0.0	0.0
DISCON	16	0.540	0.0	0.0
DISCON	20	0.536	0.0	0.0
INSGOAL	17	0.502	0.0	0.378
PUPPART	10	0.0	0.711	0.0
PUPPART	12	0.0	0.695	0.0
PUPPART	13	0.0	0.630	0.0
PUPPART	15	0.0	0.633	0.0
PUPPART	21	-0.275	0.508	0.0
FILLER	7	0.0	0.462	0.0
FILLER	14	0.0	0.456	0.0
INSGOAL	3	0.0	0.0	-0.589
INSGOAL	6	0.337	0.0	0.577
INSGOAL	19	0.421	0.0	0.429
FILLER	2	0.0	0.0	0.0
FILLER	4	0.264	0.277	-0.434
DISCON	5	-0.400	0.354	0.0
INSGOAL	9	0.366	0.316	0.342
VP		3.186	2.625	1.649

Table 3.7

Internal Consistency Analysis for the "Teacher Discipline and Control"
Educational Beliefs Scale for Teachers
(Overall and Separately by Level)

Item Number	Elementary (N=247) ^a		Junior High/Middle (N=367)		Senior High (N=611)		Overall Levels (N=1225)	
	Item-Total Correlation	Alpha if Item Deleted	Item-Total Correlation	Alpha if Item Deleted	Item-Total Correlation	Alpha if Item Deleted	Item-Total Correlation	Alpha if Item Deleted
1	.34	.63	.39	.59	.41	.70	.39	.66
5	.25	.66	.23	.63	.36	.72	.30	.69
8	.55	.56	.44	.56	.53	.67	.51	.63
11	.47	.59	.38	.58	.44	.70	.43	.65
16	.32	.63	.34	.59	.40	.70	.37	.67
18	.34	.63	.39	.57	.50	.68	.45	.65
20	.31	.64	.27	.62	.44	.70	.37	.67
7 item alpha	.65		.63		.73		.69	

^a Only the cases with non-missing data on every item in the scale are included for internal consistency computations.

Table 3.8

Internal Consistency Analysis for the "Student Participation"
Educational Beliefs Scale for Teachers
(Overall and Separately by Level)

Item Number	Elementary		Junior High/Middle		Senior High		Overall Levels	
	<u>Item-Total Correlation</u>	<u>Alpha if Item Deleted</u>	<u>Item-Total Correlation</u>	<u>Alpha if Item Deleted</u>	<u>Item-Total Correlation</u>	<u>Alpha if Item Deleted</u>	<u>Item-Total Correlation</u>	<u>Alpha if Item Deleted</u>
10	.45	.58	.49	.61	.43	.62	.46	.61
12	.46	.57	.56	.57	.51	.58	.52	.58
13	.40	.60	.45	.63	.52	.57	.48	.60
15	.44	.58	.38	.65	.30	.68	.35	.66
21	.28	.66	.31	.69	.38	.64	.35	.66
5 item alpha	.65		.68		.67		.68	

Table 3.9

Internal Consistency Analysis for the "Basic Subjects and Skills"
Educational Beliefs Scale for Teachers
(Overall and Separately by Level)

<u>Item Number</u>	<u>Elementary</u>		<u>Junior High/Middle</u>		<u>Senior High</u>		<u>Overall Levels</u>	
	<u>Item-Total Correlation</u>	<u>Alpha if Item Deleted</u>	<u>Item-Total Correlation</u>	<u>Alpha if Item Deleted</u>	<u>Item-Total Correlation</u>	<u>Alpha if Item Deleted</u>	<u>Item-Total Correlation</u>	<u>Alpha if Item Deleted</u>
6	.31	.51	.33	.45	.38	.43	.35	.45
17	.38	.45	.30	.48	.40	.42	.35	.44
19	.42	.44	.44	.38	.38	.44	.40	.41
3 item alpha	.55		.55		.61		.57	

Table 3.10

Educational Beliefs Scale Intercorrelations for Teachers
(Overall and by Level)

<u>Elementary:</u>	(1)	(2)	(3)
(1) Teacher Discipline and Control	1.00	-.10	.53
(2) Student Participation		1.00	.01
(3) Basic Subjects and Skills			1.00
<u>Junior High:</u>			
(1) Teacher Discipline and Control	1.00	-.23	.38
(2) Student Participation		1.00	-.04
(3) Basic Subjects and Skills			1.00
<u>Senior High:</u>			
(1) Teacher Discipline and Control	1.00	-.16	.52
(2) Student Participation		1.00	-.09
(3) Basic Subjects and Skills			1.00
<u>Overall Levels:</u>			
(1) Teacher Discipline and Control	1.00	-.17	.48
(2) Student Participation		1.00	-.06
(3) Basic Subjects and Skills			1.00

Table 3.11

4-Factor Analysis of Educational Beliefs
Items Over All Teachers (N=1350)

SORTED ROTATED FACTOR LOADINGS (PATTERN)

		FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4
DISCON	8	0.644	0.0	0.0	0.284
DISCON	18	0.635	0.0	0.0	0.0
INSGOAL	17	0.595	0.0	0.0	-0.266
DISCON	20	0.585	0.0	0.0	0.0
PUPPART	1	0.558	0.0	0.0	0.0
DISCON	11	0.554	0.0	0.0	0.0
DISCON	16	0.529	0.0	0.0	0.0
INSGOAL	19	0.525	0.0	-0.304	-0.286
PUPPART	13	0.0	0.672	0.0	0.0
PUPPART	12	0.0	0.671	0.0	0.0
PUPPART	10	0.0	0.656	0.0	0.325
PUPPART	21	0.0	0.555	0.0	0.0
PUPPART	15	0.0	0.513	0.282	0.0
FILLER	14	0.0	0.454	0.370	0.0
DISCON	5	-0.300	0.450	0.0	-0.269
INSGOAL	3	0.0	0.0	0.713	0.0
INSGOAL	6	0.425	0.0	-0.531	0.0
FILLER	2	0.321	0.0	0.0	-0.571
FILLER	7	0.0	0.336	0.0	0.524
FILLER	4	0.0	0.0	0.317	0.459
INSGOAL	9	0.398	0.268	-0.367	0.0
VP		3.324	2.739	1.451	1.347

SECTION 4

Influence: Teachers

Scale Development

In order to assess the degree of teacher influence in decision-making in the schools participating in IDEA's SECSI project (Bentzen, 1974), a 21-item "teacher power" scale was developed. These 21 items were selected so as to sample the range of likelihood of teacher "power," from class-specific decisions (e.g. standards of pupil behavior in their own classroom) through school-general decisions (e.g. daily schedule of whole school) to high level administrative decisions (e.g. selection of teachers to be dismissed from the school). These 21-items were administered to the teachers in both the 18 League schools and 31 non-League (comparison) schools. As expected, most of the items clearly discriminated between the two groups of teachers, the league teachers evidencing higher teacher "power" scores than the comparison teachers. Towards the latter phases of the SECSI project the instrument was modified to (a) include more items on the side of least likelihood of teacher endorsement (e.g. teacher selection and evaluation items) and (b) articulate more specifically certain areas more likely to be endorsed (e.g. classroom and curriculum items).

The resultant 33-item version of the "teacher power" scale was used in the Riverside pilot study; however, the data obtained were not used for further testing or revision of the instrument. These 33 items were used again in A Study of Schooling with a slight modification in response format, viz., the check-no check format used previously was replaced with a 3-point "influence" scale ("a lot," "some," and "no influence"). In keeping with this

scale and the instructions preceding the items, the phrase teacher influence (rather than power) is now being used as the title for this collection of items. (Table 4.1 presents the 33-item scale in its present form.)

Scale Analysis: Method

From the national study conducted in the spring and fall of 1977, data are available on 664 teachers from 13 high schools, 400 teachers from 12 junior high (or middle) schools, and 286 teachers from 13 elementary schools. As was done for the "educational beliefs" items, the inter-correlation matrix for the 33 items was computed for all 1350 teachers and then matrices were computed for the teachers at each schooling level separately. (At worst, any given correlation was based on roughly 95% of the available cases due to missing responses.)

However, unlike the "beliefs" items, the "influence" items explicitly reference the particular school employing the responding teacher. As discussed at length in Sirotnik (1979), analyzing the total correlation matrix confounds the interpretation of the multi-dimensional structure among the items by mixing up effects due to differences within and between schools. These effects can be separated by looking at two other sets of correlation matrices--those computed within each school separately and those computed by scoring schools on each item (e.g. using teacher means) and then using schools as replications in the computations. The latter type of correlation matrices are termed between matrices; the former type are termed within matrices. Finally, a weighted average of the within matrices can be computed across schools resulting in pooled within correlation matrices.

In order to keep track of the various types of correlation matrices that can be analyzed and the samples over which they are computed, the following chart can be useful:

Correlation Matrix Type	All...	High...	Junior/Middle..	Elementary...
Total	School Teachers (N=1350)	School Teachers (N=664)	School Teachers (N=400)	School Teachers (N=286)
Between	Schools (N=35)	Schools (N=13)	Schools (N=12)	Schools (N=13)
Pooled Within	School Teachers (N=1350)	School Teachers (N=664)	School Teachers (N=400)	School Teachers (N=286)

Thus, 12 different correlation matrices can be (and have been) computed and subjected to cluster and factor analyses.

But which one do we ultimately interpret? With respect to the different samples, we expect to see fairly similar results and hope to compromise on a set of common dimensions. With respect to the different matrix types, the issue is not as clear cut. The total matrix is the poorest choice since it confuses between and within school effects. The between matrix highlights differences, on the average, between schools while ignoring individual response variation within schools. The pooled within adjusts individual scores so as to remove school differences (on the average) and, thus, highlights the covariation between items irrespective of how high or low (on the average) individuals rate their particular school.* Thus, we would select the pooled within matrices if we were committed to the phenomenology of individual teachers at their particular schools as the determinant of the empirical structure of the 33 teacher influence items. This choice would allow us to use any aggregate statistic associated with the distribution of teacher responses at a particular school.

* Actually, checking the structure of the within matrices for each school separately is prerequisite to completely understanding the structure of the pooled within matrix.

On the other hand, if we were interested in teacher influence from a more systemic view point, finding that empirical dimensionality among items most sensitive to school differences on the average (i.e., using the between matrices) would be the logical choice.

Although it does not help resolve the matter conceptually, a certain pragmatic assurance is gained when one discovers that both between and pooled within correlation matrices (and total matrix as well) have similar clusterings of items. To be sure there are noticeable and interpretable differences; but the overall impression is one of similarity and the usual tendency for quite large between group correlations relative to the smaller total (across individuals irrespective of school) correlations and even smaller pooled within correlations.

The analytic and substantive consequences of separating out between and within effects are not trivial. The reader interested in the this issue may wish to read Technical Report No. 3 in this series wherein the teacher influence items are used for exemplary purposes. What follows is most of the last section of that report.

Scale Analyses: Results

In order to get some initial idea of the order of dimensionality among items, the eigenvalues were plotted against number of factors for both the between and pooled within correlation matrices. (See Figure 4.1) In both cases it is evident that there are 3 major factors and a potential for interpreting perhaps as many as 9 factors. The range of 3 to 9 factors in the pooled within solution accounts for 33% to 53% of the total item variance. As expected (given substantially high item correlations) the between solution accounts for 20% to 30% more of the variance in this range.

Tables 4.2 and 4.3 present the cluster analyses of the between and pooled within correlation matrices, and Tables 4.4 and 4.5 present the

rotated factor loadings for several orthogonal solutions for these correlation matrices. A visual inspection of the cluster analyses of both correlation matrices reveals findings compatible with the analysis of their eigenvalues, viz., three major clusters with a number of potentially interpretable sub-clusters. Looking at the two cluster analyses side-by-side, both the similarities and the differences in clustering tendencies can be seen. The general trends in both analyses for "school in general" and "selection and evaluation" clusters is unmistakable; and, although less clear, the "budget" and "staff meeting" clusters and, to some extent, both "curriculum and instruction" and "pupil-focused" clusters are evident in both analyses.

But the hierarchical patterns evidenced by the ways in which these sub-clusters become associated with their primary clusters is quite different in each analysis. Looking first at the pooled within correlation matrix, more of the sub-clustering tendencies are uncovered as more and more factors are interpreted. Without belaboring the details, the teacher influence items can be sorted into nine dimensions which can be organized into a hierarchical clustering pattern as follows (letters correspond to 9-factor solution):

Primarily school related issues:

- General school/community (A)
- Staff meetings (D)
- Dress standards (E)
- Parents (I)

Selection & evaluation of staff and fiscal management:

- Professional staff (B)
- Teaching assistants (F)
- Budget (G)

Primarily classroom related issues:

- Pupil behavior (C)
- Curriculum and instruction (H)

(Note that many of these item groupings correspond with our a priori categories used to generate the "influence" items.)

Following this same analytic approach in understanding the dimensionality of the between correlation matrix, several general themes become apparent: (1) despite the obvious similarities in small item clusters, there exist important changes in item composition for a number of factors and (2) the ease with which item clusters can be analytically identified and interpreted in the pooled within analysis is substantially diminished in the between analysis. Comparing both the cluster and factor analyses of the between matrix with those for the pooled within matrix, we see, at the 3-dimensional level, a merging of pupil-related and general school-related issues into one global dimension (factor A); a clear separation of curriculum, instruction and budget items into a separate dimension (factor C); and a relatively undisturbed staff selection and evaluation dimension (factor B).

The 6-factor solution for the between matrix ends up being the highest order of dimensionality interpretable using factor analysis. Combining these results with those of the cluster analysis, 6 subsets of items can be organized into a hierarchical clustering pattern as follows:

Global School/Community/Pupil Related issues:

Extra-curricular staff involvement & commitment (A)
Pupils (C)
Procedure/content of staff meetings (D)
Standards (pupil dress) and parent conferences (E)

Selection and evaluation of staff (B)

Curriculum, instruction and budget (F)

(Note that these item groupings do not correspond as closely to the a priori categories as did those for the pooled within analysis.)

It is interesting to try to interpret the changes which occur in moving from within to between approaches. For example, perhaps within schools teachers perceive their influence over pupil behavior much like they do for other issues which have the most direct impact upon their primary daily function, viz., classroom instruction. Averaging out these perceptions in the between analysis, we obtain a school measure of teacher influence in decisions concerning pupil behavior which may very well co-vary with discipline as a general school problem and, thus, co-vary with the host of other school-level measures of general school and community related issues. Similarly, issues pertaining to curriculum and instruction, which appeared to be classroom focused in the pooled within analysis, now appear to be more a matter of resources, co-varying with the degree to which staffs have more or less influence in preparing and managing the budget. Another difference worth noting is the relative cohesion of the selection/evaluation factors in the between analysis in contrast to the clear split into professional staff and teaching assistant components in the pooled within analysis. Given fairly pervasive but different selection and evaluation policies from district to district, we might expect all such items to be lumped together in an analysis sensitive only to those differences. However, holding school (and, thus, to a large extent district) differences constant (as we do in the pooled within analysis), we might expect teacher perceptions of influence in selection and evaluation to co-vary more along the split between their "power" over what goes on in the classroom versus what goes on at the general school level.

So we have a clear illustration of the statistical and substantive differences between the between and within group approaches even when

between group differences are relatively small. Now what is the researcher's next step in dealing with these data? Nothing more or less than acknowledging the different measurement perspectives implied by the different approaches, selecting those most appropriate to the research study, and taking his/her best shot at developing scales suggested by both the factor/cluster analyses and the substantive intent of the items. The scaling possibilities represented in Tables 4.6 and 4.7 are my best shots at the moment and pretty much parallel the above discussion. The order in which I have separated primary clusters into secondary clusters is based on the relative strengths of intra-cluster associations; this is mirrored quite closely by the order of item separations in the factor analyses as more factors are rotated.

For the sake of illustration, suppose the 3-dimensional interpretations are selected, and we wish to look at internal consistency coefficients and scale intercorrelations. Obviously, for these computations we must use the between covariance matrix for the set of "between scales" and the pooled within covariance matrix for the set of "pooled within scales." Table 4.8 presents these data. Considering our approach to scale construction, these results are not unexpected, viz., substantial alphas and moderate (but not unduly high) scale intercorrelations.

Also included in Table 4.8 are the intercorrelations between schools using the pooled within scales. It is important to re-emphasize the potential to correlate pooled within scales both within and between schools. The former matrix is a product of the psychometric phase; but the latter matrix represents findings from the study phase. School means, based on pooled within scales, must be interpreted as averages of internally consistent individual perceptions within the school and treated as such. Between scales, however, do not lend themselves to pooled within correlations--it makes no

sense to score individuals on scales derived by ignoring individual variation. The between scales measure systemic constructs which are operationally defined by item means and should be treated as such.

Finally, in order not to further complicate matters, I have withheld discussion of differences due to other relevant factors in the study, e.g., level of schooling (elementary, junior high and senior high schools). This decision has a lot to do with the homogeneity of the within school correlation matrices--an assumption required for a sensible interpretation of the pooled within analysis. For example, an inspection of the cluster analyses of the 33 items within each school separately revealed primary clustering generally similar to the pooled within analysis. As always, however, there were exceptions. And looking at pooled within analyses performed separately by level revealed several interesting results: (1) The 4-factor/cluster interpretation of the pooled within analysis over all schooling levels adequately describes each level taken separately and would seem to be viable scales for comparing schools across levels. (2) The senior high and junior high pooled within analyses are nearly identical to each other and, therefore, to the analysis over all schooling levels. (Of the total 1416 teachers in the study, 75% are from secondary schools.) (3) The elementary school analysis, although showing very similar subclustering patterns, also shows a fundamentally different primary clustering pattern. Looking at the pooled within cluster analysis for elementary schools in Table 4.9, we see a more distinct separation between the issues of immediate classroom impact and all other items. For example, note how item 6 ("daily school schedule for students") now becomes part of the "curriculum, instruction and pupil behavior" cluster.

In secondary schools, teachers always associated this item more with "general school" items. These results seem quite sensible given the departmentalized and period structure of secondary schools and the all-day, intact classroom structure of most of the elementary schools in our sample. Overall, one gets the feeling that perhaps elementary teachers (in contrast to secondary teachers) more easily compartmentalize their influence in the decision-making process as being either intra- or extra-classroom related. Again, this would seem reasonable given the more centralized operating process of elementary schools and more de-centralized operating process of secondary schools.

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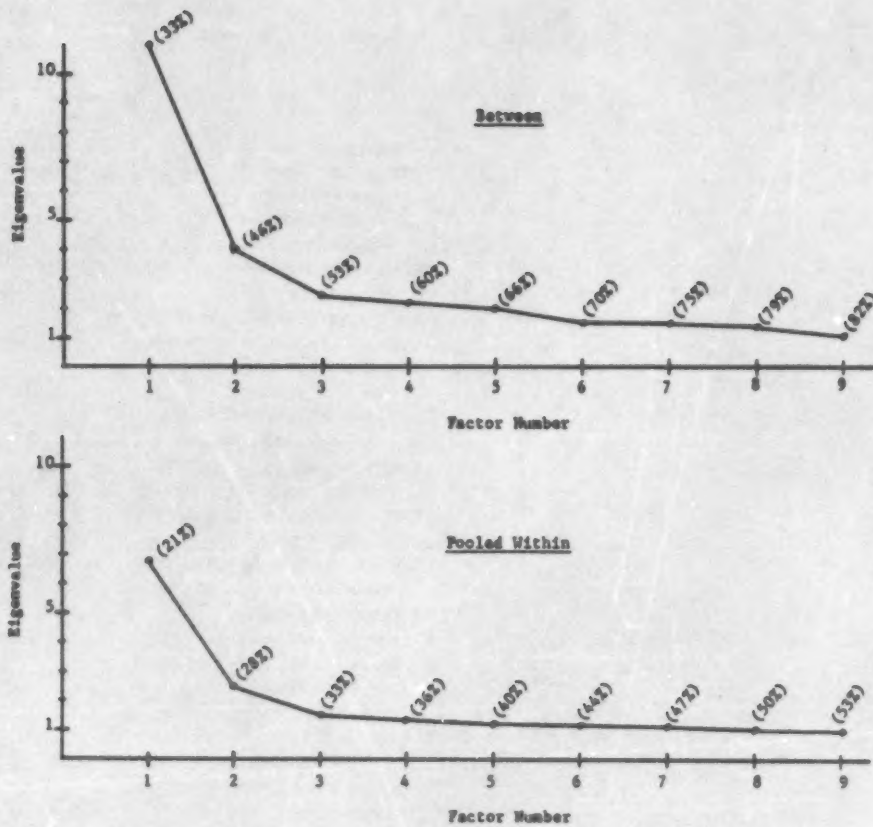


Figure 4.1 Plot of eigenvalues for varying numbers of unrotated principal components from between and pooled within correlation matrices for teacher influence items (cumulative % of variance accounted for indicated in parentheses).

Table 4.1

"Teacher Influence"
Items as Used in the Study
of Schooling

The responsibilities that teachers have vary from school to school. Sometimes these responsibilities are small in number, sometimes they are large in number. Below is a list of some of the things about which teachers may help make decisions. Please indicate how much influence the teachers at your school have in decisions made about each of the following:

- | | <i>A lot of influence</i> | <i>Some influence</i> | <i>No influence</i> |
|---|---------------------------|-----------------------|-----------------------|
| 1 Changes in curriculum. | ☐ | ☐ | ☐ |
| 2 Instructional methods that are used in classrooms. | ☐ | ☐ | ☐ |
| 3 Standards of pupil behavior in their own classrooms | ☐ | ☐ | ☐ |
| 4 Standards of pupil behavior in halls and on playground | ☐ | ☐ | ☐ |
| 5 Daily schedule in their own classroom | ☐ | ☐ | ☐ |
| 6 Daily school schedule for students. | ☐ | ☐ | ☐ |
| 7 Special behavior problems with individual pupils. | ☐ | ☐ | ☐ |
| 8 Special all school affairs, such as open house, assemblies, etc. | ☐ | ☐ | ☐ |
| 9 Committing the staff to participate in special projects or innovations. | ☐ | ☐ | ☐ |
| 10 Community relations policy. | ☐ | ☐ | ☐ |
| 11 School publications. | ☐ | ☐ | ☐ |
| 12 Unusual problems that affect the whole school. | ☐ | ☐ | ☐ |
| 13 Time of staff meetings. | ☐ | ☐ | ☐ |
| 14 Content of staff meetings. | ☐ | ☐ | ☐ |
| 15 The way in which staff meetings are conducted | ☐ | ☐ | ☐ |
| 16 Arrangements for parent conferences. | ☐ | ☐ | ☐ |
| 17 Assignments for teacher duties outside of classrooms (yard duty, etc.) | ☐ | ☐ | ☐ |
| 18 Planning social gatherings of school staff. | ☐ | ☐ | ☐ |
| 19 Standards of dress for pupils. | ☐ | ☐ | ☐ |
| 20 Standards of dress for staff. | ☐ | ☐ | ☐ |
| 21 Assigning pupils to classes | ☐ | ☐ | ☐ |
| 22 Assigning teachers to classes. | ☐ | ☐ | ☐ |
| 23 Ways of reporting pupil progress to parents | ☐ | ☐ | ☐ |
| 24 Preparing the school budget | ☐ | ☐ | ☐ |
| 25 Managing the funds available for instructional purposes | ☐ | ☐ | ☐ |
| 26 Selecting volunteer teaching assistants | ☐ | ☐ | ☐ |
| 27 Selecting paid teaching assistants. | ☐ | ☐ | ☐ |
| 28 Selecting part-time teachers for the school staff. | ☐ | ☐ | ☐ |
| 29 Selecting full-time teachers for the school staff. | ☐ | ☐ | ☐ |
| 30 Evaluating the performance of teaching assistants. | ☐ | ☐ | ☐ |
| 31 Evaluating the performance of full-time teachers | ☐ | ☐ | ☐ |
| 32 The dismissal and/or transfer of teachers | ☐ | ☐ | ☐ |
| 33 Selecting administrative personnel to be assigned to the school | ☐ | ☐ | ☐ |

Cluster Analysis of the Between Correlation Matrix

Notes: The correlation between any two items is found at the intersection of the row determined by the first ordered item with the diagonal determined by the second ordered item. (For example, the correlation between items 7 and 14 is .33.) Clusters are formed visually by the inverted right triangles with their bases along the left margin. (For example, the three primary clusters are heavily outlined.)

[illegible]

Notes: The correlation between any two items is found at the intersection of the row determined by the first ordered item with the diagonal determined by the second ordered item. (For example, the correlation between items 7 and 14 is .35.) Clusters are formed visually by the inverted right triangles with their bases along the left margin. (For example, the three primary clusters are heavily outlined.)

Table 4.4

3-, 4- and 6-Factor Solutions for the Between Correlation Matrix
(Numbers indicate rank order of factors in terms of variance accounted for)

A Partial Description
of Teacher Performance Items:
Candidates having to do with...

		1.	3.	2.	2.	4.	1.	3.	2.	4.	1.	3.	6.	3.
Candidates	1 Groups in classroom.....			X				X						X
	2 Instructional methods that are used in classroom.....			X				X						X
Candidates	3 Standards of work behavior in daily work situations.....	X					X				X			
	4 Daily conduct in daily work situations.....						X				X			
Candidates	5 Standards of staff behavior in daily work situations.....	X					X				X			
	6 Daily conduct in daily work situations.....	X					X				X			
Candidates	7 Standards of work behavior in daily work situations.....	X					X				X			
	8 Daily conduct in daily work situations.....	X					X				X			
Candidates	9 Standards of work behavior in daily work situations.....	X					X				X			
	10 Daily conduct in daily work situations.....	X					X				X			
Candidates	11 Standards of work behavior in daily work situations.....	X					X				X			
	12 Daily conduct in daily work situations.....	X					X				X			
Candidates	13 Standards of work behavior in daily work situations.....	X					X				X			
	14 Daily conduct in daily work situations.....	X					X				X			
Candidates	15 Standards of work behavior in daily work situations.....	X					X				X			
	16 Daily conduct in daily work situations.....	X					X				X			
Candidates	17 Standards of work behavior in daily work situations.....	X					X				X			
	18 Daily conduct in daily work situations.....	X					X				X			
Candidates	19 Standards of work behavior in daily work situations.....	X					X				X			
	20 Daily conduct in daily work situations.....	X					X				X			
Candidates	21 Standards of work behavior in daily work situations.....	X					X				X			
	22 Daily conduct in daily work situations.....	X					X				X			
Candidates	23 Standards of work behavior in daily work situations.....	X					X				X			
	24 Daily conduct in daily work situations.....	X					X				X			
Candidates	25 Standards of work behavior in daily work situations.....	X					X				X			
	26 Daily conduct in daily work situations.....	X					X				X			
Candidates	27 Standards of work behavior in daily work situations.....	X					X				X			
	28 Daily conduct in daily work situations.....	X					X				X			
Candidates	29 Standards of work behavior in daily work situations.....	X					X				X			
	30 Daily conduct in daily work situations.....	X					X				X			
Candidates	31 Standards of work behavior in daily work situations.....	X					X				X			
	32 Daily conduct in daily work situations.....	X					X				X			
Candidates	33 Standards of work behavior in daily work situations.....	X					X				X			
	34 Daily conduct in daily work situations.....	X					X				X			
Candidates	35 Standards of work behavior in daily work situations.....	X					X				X			
	36 Daily conduct in daily work situations.....	X					X				X			
Candidates	37 Standards of work behavior in daily work situations.....	X					X				X			
	38 Daily conduct in daily work situations.....	X					X				X			
Candidates	39 Standards of work behavior in daily work situations.....	X					X				X			
	40 Daily conduct in daily work situations.....	X					X				X			
Candidates	41 Standards of work behavior in daily work situations.....	X					X				X			
	42 Daily conduct in daily work situations.....	X					X				X			
Candidates	43 Standards of work behavior in daily work situations.....	X					X				X			
	44 Daily conduct in daily work situations.....	X					X				X			
Candidates	45 Standards of work behavior in daily work situations.....	X					X				X			
	46 Daily conduct in daily work situations.....	X					X				X			
Candidates	47 Standards of work behavior in daily work situations.....	X					X				X			
	48 Daily conduct in daily work situations.....	X					X				X			
Candidates	49 Standards of work behavior in daily work situations.....	X					X				X			
	50 Daily conduct in daily work situations.....	X					X				X			

Note: X = loadings > .55

Table 4.5

3-, 4-, 7- and 9-Factor Solutions for the Revised Within Correlation Matrix
(Numbers indicate rank order of factors in terms of variance accounted for)

A Revised Grouping
of Factors Difference Score
Statistics listed in the table...

Factor	1	2	3	4	5	6	7	8	9
	A	B	C	D	E	F	G	H	I
1. Change in attitude									
2. Attitudes toward the war and the enemy									
3. Attitudes toward the enemy in that war									
4. Attitudes toward the war and the enemy									
5. Attitudes toward the war and the enemy									
6. Attitudes toward the war and the enemy									
7. Attitudes toward the war and the enemy									
8. Attitudes toward the war and the enemy									
9. Attitudes toward the war and the enemy									
10. Attitudes toward the war and the enemy									
11. Attitudes toward the war and the enemy									
12. Attitudes toward the war and the enemy									
13. Attitudes toward the war and the enemy									
14. Attitudes toward the war and the enemy									
15. Attitudes toward the war and the enemy									
16. Attitudes toward the war and the enemy									
17. Attitudes toward the war and the enemy									
18. Attitudes toward the war and the enemy									
19. Attitudes toward the war and the enemy									
20. Attitudes toward the war and the enemy									
21. Attitudes toward the war and the enemy									
22. Attitudes toward the war and the enemy									
23. Attitudes toward the war and the enemy									
24. Attitudes toward the war and the enemy									
25. Attitudes toward the war and the enemy									
26. Attitudes toward the war and the enemy									
27. Attitudes toward the war and the enemy									
28. Attitudes toward the war and the enemy									
29. Attitudes toward the war and the enemy									
30. Attitudes toward the war and the enemy									
31. Attitudes toward the war and the enemy									
32. Attitudes toward the war and the enemy									
33. Attitudes toward the war and the enemy									
34. Attitudes toward the war and the enemy									
35. Attitudes toward the war and the enemy									
36. Attitudes toward the war and the enemy									
37. Attitudes toward the war and the enemy									
38. Attitudes toward the war and the enemy									
39. Attitudes toward the war and the enemy									
40. Attitudes toward the war and the enemy									
41. Attitudes toward the war and the enemy									
42. Attitudes toward the war and the enemy									
43. Attitudes toward the war and the enemy									
44. Attitudes toward the war and the enemy									
45. Attitudes toward the war and the enemy									
46. Attitudes toward the war and the enemy									
47. Attitudes toward the war and the enemy									
48. Attitudes toward the war and the enemy									
49. Attitudes toward the war and the enemy									
50. Attitudes toward the war and the enemy									

Note: X = loadings > .45

Table 4.6

Hierarchical Clustering & Scaling
Possibilities for Pooled Within Correlation Matrix

W(123). Selection, Evaluation & Fiscal
Management

W1. Selection & Evaluation
of Professional Staff

- 28 Selecting part-time teachers for the school staff.....
- 29 Selecting full-time teachers for the school staff.....
- 31 Evaluating the performance of full-time teachers.....
- 32 The dismissal and/or transfer of teachers.....
- 33 Selecting administrative personnel to be assigned to the school.....

W2. Selection & Evaluation of
Teaching Assistants

- 26 Selecting volunteer teaching assistants
- 27 Selecting paid teaching assistants. . . .
- 30 Evaluating the performance of teaching assistants.....

W3. Fiscal Management

- 24 Preparing the school budget.....
- 25 Managing the funds available for instructional purposes.....

W4. Curriculum, Instruction
& Pupil Behavior

- 1 Changes in curriculum.....
- 2 Instructional methods that are used in classrooms.....
- 3 Standards of pupil behavior in their own classrooms.....
- 4 Standards of pupil behavior in halls and on playground.....
- 5 Daily schedule in their own classroom .
- 7 Special behavior problems with individual pupils.....

W(56). School Focused Issues

W5. Extra-Curricular & Community
Related Issues & Activities

- 8 Special all-school affairs, such as open house, assemblies, etc.....
- 9 Committing the staff to participate in special projects or innovations. . .
- 10 Community relations policy.....
- 11 School publications.....
- 12 Unusual problems that affect the whole school.....

W6. Procedures & Content
of Staff Meetings

- 13 Time of staff meetings.....
- 14 Content of staff meetings.....
- 15 The way in which staff meetings are conducted.....

Additional 2-Item Clusters:

Communication With Parents

- 16 Arrangements for parent conferences.
- 23 Ways of reporting pupil progress to parents.....

Pupil & Staff Class Assignments

- 21 Assigning pupils to classes.....
- 22 Assigning teachers to classes.....

Pupil & Staff Dress Code

- 19 Standards of dress for pupils.....
- 20 Standards of dress for staff.....

Table 4.7

Hierarchical Clustering & Scaling
Possibilities for Between Correlation Matrix

B(123). Pupil/Class-Related &
School-General Issues

B1. Pupil Focused Issues

- 3 Standards of pupil behavior in their own classrooms
- 4 Standards of pupil behavior in halls and on playground
- 5 Daily schedule in their own classroom ..
- 6 Daily school schedule for students.
- 7 Special behavior problems with individual pupils.
- 16 Arrangements for parent conferences.
- 19 Standards of dress for pupils.
- 21 Assigning pupils to classes
- 23 Ways of reporting pupil progress to parents

B4. Resources & Curriculum

- 1 Changes in curriculum.
- 2 Instructional methods that are used in classrooms.
- 24 Preparing the school budget
- 25 Managing the funds available for instructional purposes

B(23). School Focused Issues

B2. Extra-classroom Issues, Activities & Commitments

- 8 Special all-school affairs, such as open houses, assemblies, etc.
- 9 Committing the staff to participate in special projects or innovations.
- 10 Community relations policy
- 12 Unusual problems that affect the whole school
- 13 Time of staff meetings.
- 17 Assignments for teacher duties outside of classrooms (yard duty, etc.) ...
- 18 Planning social gatherings of school staff

B3. Procedures & Content of Staff Meetings

- 14 Content of staff meetings.
- 15 The way in which staff meetings are conducted

B5. Selection & Evaluation of Staff

- 27 Selecting paid teaching assistants.
- 28 Selecting part-time teachers for the school staff
- 29 Selecting full-time teachers for the school staff
- 30 Evaluating the performance of teaching assistants.
- 31 Evaluating the performance of full-time teachers
- 32 The dismissal and/or transfer of teachers

Table 4.8

Scale Intercorrelations and
Alpha Coefficients for Between and
Pooled Within Dimensions

Between Scales; Between Correlations

	B(123)	B4	B5	<u>Alpha</u>
B(123)	1.00	.46	.27	.92
B4		1.00	.27	.81
B5			1.00	.79

Pooled Within Scales; Pooled Within Correlations

	W(123)	W4	W(56)	<u>Alpha</u>
W(123)	1.00	.22	.46	.74
W4		1.00	.41	.62
W(56)			1.00	.80

Pooled Within Scales; Between Correlations

	W(123)	W4	(W56)
W(123)	1.00	.42	.53
W4		1.00	.59
W(56)			1.00

Cluster Analysis of Pooled Within Correlation Matrix for Elementary Teachers Only

YOUR PRINTING OVER ASSOCIATE CORRELATION DATA.

NAME VALLEY [illegible]

SECTION 5

Organizational Climate: Teachers

Scale Development

In order to assess the problem-solving/decision-making process going on in the schools participating in /I/D/E/A/'s SECSI project (Bentzen, 1974), a 13-item questionnaire was developed around a model postulating four related, synergistic processes: dialogue, decision, action and evaluation. Operationally, each respondent first described an important school-wide problem and then answered the DDAE items in relation to that problem. Then the 13-items were responded to again, except in relation to a second, teacher-supplied problem involving a staff subgroup, (e.g., team, pod, etc.). This instrument proved to be quite useful, especially since the DDAE concepts could be applied specifically to important problems at the building level.

For the purposes of the Study of Schooling, the DDAE instrument was considerably lengthened to tap into some additional aspects of the problem-solving process, e.g., extent, urgency and relevancy of the problem. In the Riverside pilot study, each teacher was asked to specify whether problems were worked on mostly by the total staff or mostly by subgroups; then, depending upon their answer, they were to describe an important problem worked on in this way and to answer the remaining DDAE items in relation to this problem.

Following the Riverside pilot and subsequent analysis of the data, it became clear that the beauty of the DDAE instrument was in its specificity and utility in longitudinal, change-oriented studies--exactly the purpose for which it was originally designed. A Study of Schooling, however, was to

be primarily a point-in-time survey, hoping to explore a variety of research questions within and across schools. The comparability of teacher responses (within and across schools), given the variety of problem referents and subgroup versus total staff configurations, became a critical concern.

After several months of effort trying to preserve the DDAE structure and infusing the instrument with common referents and group structures, the basic instrument was abandoned and replaced with the more traditional climate-type survey.

Due to the time restraints at this point in the study, the 100-item "climate" survey was developed by several staff members over a one (or two) month period of concentrated literature review. Based on the more popular instruments developed in the industrial, organizational climate area, e.g., Survey of Organizations (Taylor & Bowers, 1972) and Litwin & Stringer's questionnaire (1968), and most of the instruments (not very many) developed for educational use, e.g., OCDQ (Halpin & Croft, 1963) and Likert School Profiles (Likert & Likert, 1972), over a dozen constructs were identified and items were modified or written and added for these constructs. Additional constructs which seemed to be needed but not found in existing instruments were also included, most notably, "problem-solving/decision-making" process construct based mostly on the DDAE model. In all, fifteen dimensions emerged, as defined by their items in Table 5.1.

Scale Analysis

From the national study conducted in the spring and fall of 1977, data are available on 664 teachers from 13 high schools, 400 teachers from 12 junior high (or middle) schools, and 286 teachers from 13 elementary schools. As was done for the "teacher influence" items (see section 4), the intercorrelation matrices for the 100 items were produced both between

schools and pooled within schools, overall schools and separately by level of schooling. The conceptual and operational differences implied by these various matrices are discussed at length in Sirotnik (1979). Presenting the kind of detailed analyses and tabular results for 100 items, as was done in Section 4 for 33 items, is next to impossible. Instead, a summary of the basic trends which emerged will follow.

Depending upon which analysis was being pursued, a different set of scales (and item composition for these scales) could be recommended. But notwithstanding what appeared to be somewhat different item associations when adhering to fairly strict interpretations of the empirical structures produced by the factor analyses, a couple of more general and unifying trends also emerged:

1. A pronounced separation occurs between principal and staff items into fairly distinct, but global, clusters in spite of our a priori intentions of writing both principal and staff items for each of our constructs. Apparently the constructs, e.g., role definition, trust, production emphasis, support and encouragement, etc., are not the most basic structures of the organization's climate--rather the roles of principal and staff in their interactions with these concepts and each other are more fundamental structures. It should be noted that I am referring to perceptual structures; and, in fact, the principal-staff item separation was more pronounced for the pooled within analysis than for the between analysis. Even so, the between analyses not only suggest similar principal-staff separations, but are based on averages of very perceptual items, judging from the item variances within each school. (The relative proportions of between-to-within school item variation never gets any bigger than 25:75%.) It might also be noted that this finding of principal and staff separation in the dimensionality of school climate was also Halpin & Crofts' (1963) finding in their development of the OCDQ (the only instrument close to ours in substance and form which was ever factor analysed at the item level).

2. Aside from the major principal and staff item clusters, a couple of secondary clusters surface in most analyses:
(a) problem-solving/decision-making process and
(b) staff morale/motivation/satisfaction.

Although the item composition is not identical for these clusters when one interprets pooled within or between analyses, there is sufficient overlap in items and substance. These two clusters differ from the primary principal and staff clusters in one very important way: the items of the primary clusters are much more descriptive of interpersonal relations (either staff-to-staff or principal-to-staff); whereas those of the secondary clusters are much more descriptive of either processes (cluster a) or of staff perceptions of themselves vis a vis their work (cluster b).

It is interesting to note that the between-school analyses (especially the cluster analyses) tended to produce more interpretable dimensionality (albeit highly correlated dimensionality) in the items such that the global principal and staff clusters could be separated into quite reasonable substantive components. Given that the pooled within analysis reflects a kind of "average" perceptual space, this finding might be predictable. That is, a great deal of dimensionality may exist within each school; and the pooled within analysis reflects only those strongest trends which resist cancellation in the averaging process. (There is some supporting evidence for this if one wades through the 38 separate cluster analyses of the 100 items at each school.) However, to the extent that we wish to compare schools, we need to settle on "comparable" dimensions, which an "average" analysis provides about as well as any other.

Given our rational method of scale construction described in the Introduction to this report, we acted not only upon the strong empirical suggestion to separate the items into the four subsets referred to above, but also upon the strong substantive utility inherent in separating further the global principal and staff clusters. Certainly such separation will result in highly correlated sub-clusters; but even for 2 clusters correlating

in, say the .70's, as much as 50% of their variance remains unpredictable for one cluster score predicting the other. This unpredictable variance in each cluster may very well correlate in an interesting pattern with other variables later on. Such findings would easily be obscured if the two clusters were merged into a single score.

This is not to suggest, however, that we now turn to wishful thinking as the basis for further separation of the global clusters. Even in highly correlating items, empirical sub-clustering tendencies are evident. This is especially true for the between-schools correlation matrix. Taking our hints from these sub-clustering patterns both the global principal and staff dimensions were broken down into what appear to be quite reasonable components--four for the principal and six for the staff. Given the additional "problem-solving/decision-making" cluster observed at the outset, we are suggesting a total of 12 scales be used as defined in Table 5.2. Furthermore, to the extent that certain staff wish to use more global and less correlated dimensions, Table 5.3 suggests the hierarchical order in which the 12 scales might be combined. (A second order clustering at the scale score level should support these recommendations.)

Internal consistency analyses reflecting these scaling recommendations have been completed; alpha coefficients for each scale are reported in Table 5.4.

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Table 5.1

A Priori Dimensions of School Work Environment
as Perceived by Teachers^a

Work Facilitation (6)

- 36. Routine duties interfere with the job of teaching.
- 46. Other staff members help me find ways to do a better job.
- 54. The principal helps staff members to improve their performance.
- 55. Activities and schedules are sensibly organized.
- 57. Necessary materials, personnel, etc., are readily available as needed by the staff.
- 88. Excessive rules, administrative details, and red tape make it difficult to get things done.

Cooperation (5)

- 10. The administrator(s) and teachers collaborate in making the school run effectively.
- 21. The principal encourages "team work."
- 31. The staff can easily mobilize to cope with unusual problems or work demands.
- 71. There is a great deal of cooperative effort among staff members.
- 89. There is an "every person for themselves" attitude.

Conflict Resolution (6)

- 7. Conflicts between the principal and one or more staff members are not easily resolved.
- 20. The principal tries to deal with conflict constructively; not just "keep the lid on."
- 22. Conflicts are almost always avoided, denied, or suppressed.
- 28. Conflicts are almost always accepted as necessary and desirable.
- 81. When conflicts occur between the staff members, they handle them constructively rather than destructively.
- 90. The principal helps staff members settle their differences.

Autonomy (4)

- 16. I feel like I always have to "go along with the group" in this school.
- 24. The principal is reluctant to allow staff members any freedom of action.
- 41. It is possible for teachers to deviate from prescribed curricula for the school.
- 62. Staff members can do their work in the way they think is best.

Motivation/Reward (6)

- 9. Staff members are recognized for a job well done.
- 35. The principal inspires staff members to work hard.
- 45. Most people who are teaching in this school find their job rewarding in other than monetary ways.
- 50. Staff members create a highly reinforcing environment, rewarding each other for their efforts.
- 70. There are opportunities for advancement for staff members who work hard at this school.
- 84. Conditions in this school motivate staff members to work hard.

a Response scale:

6 = Strongly agree 5 = Moderately agree 4 = Mildly agree
3 = Mildly disagree 2 = Moderately disagree 1 = Strongly disagree

(Minus sign indicates item reflection for scoring purposes.)

Quality of Communication (8)

1. Staff members have all of the information they need to have in order to do their jobs well.
15. Information is shared between teachers from different departments, teams, or grade levels.
18. The principal knows the problems faced by the staff.
- 29. Staff members don't listen to each other.
- 56. Meetings are usually dominated by a few individuals.
78. Information is shared between teachers within the same department, team, or grade level.
94. The principal frequently seeks out the ideas of staff members.
97. Staff members feel free to communicate with the principal.

Production Emphasis (6)

17. The principal sets priorities, makes plans, and sees that they are carried out.
32. In faculty meetings, there is the feeling of "let's get things done."
42. The staff is task oriented; there is little wasted time and jobs get completed.
69. The principal sees to it that staff members perform their tasks well.
73. Staff members maintain high standards of performance for themselves.
93. Staff meetings are generally reserved for important matters--not trivial ones.

Problem-Solving/Decision-Making (16)

3. When decisions are made, it is usually clear what needs to be done to carry them out.
8. People do a good job of examining a lot of alternative solutions to problems before deciding to try one.
- 11. The principal usually makes most of the important decisions that affect this school.
14. People are involved in making decisions which affect them.
19. When a problem comes up, this school has viable procedures for working on it.
30. The staff usually makes most of the important decisions that affect this school.
34. I feel that I can have input regarding important decisions that affect me.
48. We solve problems; we don't just talk about them.
49. The principal usually consults with other staff members before he/she makes decisions that affect them.
59. The staff makes good decisions and solves problems well.
60. If I have a school-related problem, I feel there are channels open to try to get the problem resolved.
63. The principal uses group meetings to solve important school problems.
- 64. It is often unclear as to who can make decisions.
- 74. After decisions are made, nothing is usually done about them.
85. Decisions are made by people who have the most adequate and accurate information.
99. Problems are recognized and worked on; they are not allowed to slide.

Forward Looking/Self-Renewal/Innovation (8)

- 6. The staff is continually evaluating its programs and activities and attempting to change them for the better.
- 13. Teachers prefer the "tried and true"; they see no reason to seek new ways of teaching and learning.
- 23. The principal encourages teachers to experiment with their teaching.
- 39. Teachers are continually learning and seeking new ideas.
- 52. The principal would be willing to take a chance on a new idea.
- 53. Teachers encourage each other to experiment with their teaching.
- 77. Teachers would be willing to take a chance on a new idea.
- 91. The principal is continually learning; seeking new ideas.

Role Clarification (6)

- 4. Staff members have vaguely defined roles.
- 5. Goals and priorities for this school are clear.
- 33. Experienced teachers let new teachers know what is expected of them.
- 82. My work objectives are very clear and specific; I know exactly what I am to do as a staff member.
- 86. The principal lets staff members know what is expected of them.
- 95. The role of the principal is clearly understood by staff members.

Openness/Flexibility (7)

- 26. Staff members frequently discuss how they feel about each other.
- 27. There are cliques of teachers who make it difficult to have an open climate.
- 79. Staff members are tolerant of each others opinions even if those opinions are different from their own.
- 80. The principal has a strong need for order and certainty; he/she has little tolerance for ambiguity.
- 87. Staff members are flexible; they can reconsider their positions on issues and are willing to change their minds.
- 92. The staff has a strong need for order and certainty; they have little tolerance for ambiguity.
- 96. The principal could accept staff decisions even if he/she were not to agree with them.

Trust (6)

- 44. The staff members trust the principal.
- 47. In my work group (e.g., team, department, grade level), we trust each other a great deal.
- 66. The principal trusts the staff members.
- 67. When the principal acts as a spokesperson for this school, he/she can be trusted to fairly represent the needs and interests of the staff.
- 68. There are several staff members whom I don't really trust very much.
- 72. Staff members don't really trust each other enough.

Support (5)

- 12. Staff members support and encourage the principal.
- 25. There is always someone in this school I can count on.
- 37. Staff members support and encourage each other.
- 38. The principal's behavior toward the staff is supportive and encouraging.
- 61. Staff members never get support and encouragement.

Warmth/Consideration (6)

- 2. A friendly atmosphere prevails among the staff.
- 40. The principal looks out for the personal welfare of staff members.
- 43. There is no real interest in the welfare and happiness of those who work here.
- 51. New staff members are made to feel welcome and part of the group.
- 58. I think the staff members care about me as a person.
- 75. Teachers from one department, team, or grade level have personal respect for those from other departments, teams, or grade levels.

Morale (5)

- 65. Staff members are proud to be working in this school.
- 76. The morale of staff members is rather low.
- 83. I usually look forward to each working day at this school.
- 98. In general, it is a waste of time for me to try to do my very best.
- 100. Staff members have a high degree of commitment to their jobs.

Table 5.2

Rationally Derived Scales
for School Work Environment
as Perceived by Teachers

Quality of Problem-Solving/Decision-Making Processes (9)

3. When decisions are made, it is usually clear what needs to be done to carry them out.
10. The administrator(s) and teachers collaborate in making the school run effectively.
19. When a problem comes up, this school has viable procedures for working on it.
32. In faculty meetings, there is the feeling of "let's get things done."
60. If I have a school-related problem, I feel there are channels open to try to get the problem resolved.
- 64. It is often unclear as to who can make decisions.
- 74. After decisions are made, nothing is usually done about them.
85. Decisions are made by people who have the most adequate and accurate information.
99. Problems are recognized and worked on; they are not allowed to slide.

Principal Receptiveness/Staff Influence (5)

14. People are involved in making decisions which affect them.
34. I feel that I can have input regarding important decisions that affect me.
49. The principal usually consults with other staff members before he/she makes decisions that affect them.
63. The principal uses group meetings to solve important school problems.
94. The principal frequently seeks out the ideas of staff members.

Principal - Staff Affection (8)

- 7. Conflicts between the principal and one or more staff members are not easily resolved.
- 12. Staff members support and encourage the principal.
- 38. The principal's behavior toward the staff is supportive and encouraging.
- 40. The principal looks out for the personal welfare of staff members.
- 44. The staff members trust the principal.
- 66. The principal trust the staff members.
- 67. When the principal acts as a spokesperson for this school, he/she can be trusted to fairly represent the needs and interests of the staff.
- 97. Staff members feel free to communicate with the principal.

Principal Leadership (8)

- 18. The principal knows the problems faced by the staff.
- 20. The principal tries to deal with conflict constructively; not just "keep the lid on."
- 35. The principal inspires staff members to work hard.
- 54. The principal helps staff members to improve their performance.
- 69. The principal sees to it that staff members perform their tasks well.
- 86. The principal lets staff members know what is expected of them.
- 90. The principal helps staff members settle their differences.
- 95. The role of the principal is clearly understood by staff members.

Principal Openness (6)

- 21. The principal encourages "team work."
- 23. The principal encourages teachers to experiment with their teaching.
- 24. The principal is reluctant to allow staff members any freedom of action.
- 52. The principal would be willing to take a change on a new idea.
- 91. The principal is continually learning: seeking new ideas.
- 96. The principal could accept staff decisions even if he/she were not to agree with them.

Staff Work Facilitation (5)

- 36. Routine duties interfere with the job of teaching.
- 55. Activities and schedules are sensibly organized.
- 57. Necessary materials, personnel, etc., are readily available as needed by the staff.
- 88. Excessive rules, administrative details, and red tape make it difficult to get things done.
- 62. Staff members can do their work in the way they think is best.

Staff Task Orientation (4)

- 31. The staff can easily mobilize to cope with unusual problems or work demands.
- 42. The staff is task oriented: there is little wasted time and jobs get completed.
- 48. We solve problems; we don't just talk about them.
- 59. The staff makes good decisions and solves problems well.

Staff-to-Staff Affection (12)

- 2. A friendly atmosphere prevails among the staff,
- 27. There are cliques of teachers who make it difficult to have an open climate.
- 37. Staff members support and encourage each other.
- 43. There is not real interest in the welfare and happiness of those who work here.
- 47. In my work group (e.g., team, department, grade level), we trust each other a great deal.
- 50. Staff members create a highly reinforcing environment, rewarding each other for their efforts.
- 51. New staff members are made to feel welcome and part of the group.
- 58. I think the staff members care about me as a person.
- 68. There are several staff members whom I don't really trust very much.
- 71. There is a great deal of cooperative effort among staff members.
- 72. Staff members don't really trust each other enough.
- 89. There is an "every person for themselves" attitude.

Staff Self-Renewal (5)

- 6. The staff is continually evaluating its programs and activities and attempting to change them for the better.
- 8. People do a good job of examining a lot of alternative solutions to problems before deciding to try one.
- 13. Teachers prefer the "tried and true"; they see no reason to seek new ways of teaching and learning.
- 39. Teachers are continually learning and seeking new ideas.
- 77. Teachers would be willing to take a chance on a new idea.

Staff Openness (7)

- 15. Information is shared between teachers from different departments, teams, or grade levels.
- 29. Staff members don't listen to each other.
- 75. Teachers from one department, team, or grade level have personal respect for those from other departments, teams, or grade levels.
- 78. Information is shared between teachers within the same department, team, or grade level.
- 79. Staff members are tolerant of each others opinions even if those opinions are different from their own.
- 81. When conflicts occur between the staff members, they handle them constructively rather than destructively.
- 87. Staff members are flexible; they can reconsider their positions on issues and are willing to change their minds.

Staff Job Satisfaction (6)

- 45. Most people who are teaching in this school find their job rewarding in other than monetary ways.
- 65. Staff members are proud to be working in this school.
- 76. The morale of staff members is rather low.
- 83. I usually look forward to each working day at this school.
- 84. Conditions in this school motivate staff members to work hard.
- 98. In general, it is a waste of time for me to try to do my very best.

Items Not Used (25)

1. Staff members have all of the information they need to have in order to do their jobs well.
4. Staff members have vaguely defined roles.
5. Goals and priorities for this school are clear.
9. Staff members are recognized for a job well done.
11. The principal usually makes most of the important decisions that affect this school.
16. I feel like I always have to "go along with the group" in this school.
17. The principal sets priorities, makes plans, and sees that they are carried out.
22. Conflicts are almost always avoided, denied, or suppressed.
25. There is always someone in this school I can count on.
26. Staff members frequently discuss how they feel about each other.
28. Conflicts are almost always accepted as necessary and desirable.
30. The staff usually makes most of the important decisions that affect this school.
33. Experienced teachers let new teachers know what is expected of them.
41. It is possible for teachers to deviate from prescribed curricula for the school.
46. Other staff members help me find ways to do a better job.
53. Teachers encourage each other to experiment with their teaching.
56. Meetings are usually dominated by a few individuals.
61. Staff members never get support and encouragement.
70. There are opportunities for advancement for staff members who work hard at this school.
73. Staff members maintain high standards of performance for themselves.
80. The principal has a strong need for order and certainty; he/she has little tolerance for ambiguity.

Items Not Used (Cont'd.)

- 82. My work objectives are very clear and specific; I know exactly what I am to do as a staff member.
- 92. The staff has a strong need for order and certainty; they have little tolerance for ambiguity.
- 93. Staff meetings are generally reserved for important matters - not trivial ones.
- 100. Staff members have a high degree of commitment to their jobs.

Table 5.3

Combining the 11 SWEPT
Scales Into 3-4 Relatively
Less Correlated Composite
Clusters

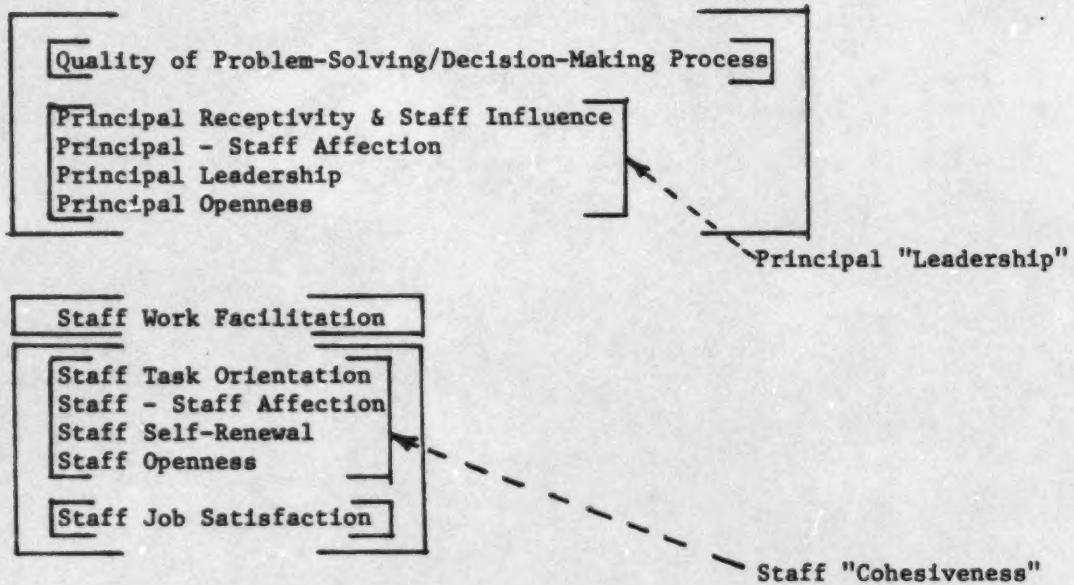


Table 5.4
Between and Pooled Within Alphas
for SWEPT Scales

<u>Scale</u>	<u>No. of Items</u>	<u>Alpha</u>	
		<u>Between</u>	<u>Pooled Within</u>
Quality of Problem-Solving/Decision-Making Process	9	.98	.87
Principal Receptivity & Staff Influence	5	.94	.82
Principal - Staff Affection	8	.98	.92
Principal Leadership	8	.97	.90
Principal Openness	6	.95	.83
Staff Work Facilitation	5	.88	.64
Staff Task Orientation	4	.95	.77
Staff - Staff Affection	12	.97	.89
Staff Self-Renewal	5	.91	.75
Staff Openness	7	.94	.82
Staff Job Satisfaction	6	.93	.82

SECTION 6

Class Climate: Secondary and Upper Elementary Students

Scale Development

The history of the construction and field testing of the class climate questionnaires is a bit more complicated than that for the previous instruments. At risk of oversimplification, three developmental phases can be identified as follows:

Phase 1. The original "affective substudy" group generated a conceptual model of classroom affect (Novotney, 1975) similar to a variety of models postulating contextual presses from outside and inside the classroom, the latter being generated by personal (teachers and students) needs, values, attitudes, etc. Eighteen categories of these latter types of variables were developed for students; after item revisions and teacher reviews, a 147-item questionnaire was pilot tested on 350 upper elementary students. A factor analysis suggested 5 interpretable factors accounting for 97-items on the questionnaire: Teacher Concern, Classroom Dissonance, Peer Esteem, Student Autonomy and Student Hurt. The analysis also suggested that the two scale forms of answering each question (frequency and affect) produced nearly the same scores. A second pilot test on 250 lower SES upper elementary students varified the previous factor structure but also suggested a second teacher "concern" factor oriented more towards instructional practices--this factor was labled "Teacher as Facilitator." Based on this second analysis, a 60-item, 6-scale version of the classroom climate instrument emerged. (See Novotney and Overman, 1975 for complete details of this phase.)

Phase 2. The questionnaire in Phase 1 was used in the Riverside Pilot Study. A factor analysis again verified the basic 5-factor structure ("Teacher as Facilitator" did not separate out as clearly from "Teacher Concern" in this analysis). But, concurrent with the work of the "Affective Substudy" group was that of the "Social Systems: Classroom Substudy" group. The questionnaires emerging from this group were essentially those developed by Gordon and Adler (1963). Using a conceptual model of teacher leadership and resultant pupil attitudes, a set of scales measuring Task, Authority, and Expressiveness (Teacher) and Morale and Compliance (Pupils) were contained in a set of about 70 items using a variety of response formats. Three critical results emerged from the Riverside pilot study related to these two substudies: (a) The affective instrument was psychometrically OK but narrow in focus (b) The social systems class instruments were weak in scale internal consistency and many item response formats were difficult for most students and (c) There was considerable overlap in what was being measured by both sets of instruments.

Phase 3. The above two "substudies" were merged into a single work group, as were their conceptual models. In effect, the non-overlapping constructs of both instruments were retained and a whole lot more were added. The 5 scales from the affective instrument were retained and "task" and "authority" items were written using the same item format, but following along the conceptual lines of the old "social systems: class" instrument. Additionally, items were written to more clearly focus on instructional practices like knowledge of results and appropriate practice. Finally, many constructs from the Learning Environment Inventory (Anderson, 1971) were added to our questionnaire. (Items for these constructs were either written anew or were modified versions of those in the LEI in order to reflect our interpretations of the constructs and/or improve readability

and applicability for wider grade ranges.) During this time, a number of issues began to surface, not the least of which was the relationship between item form ("I" vs. "we-they" type items) and the kind of "climate" which we might be assessing. Other than deciding to include some parallel item forms, this issue as well as most others was left unresolved. The resultant 113-item questionnaire and scales as defined at this phase of development is given in Table 6.1.

Scale Analysis: Results

Our national study conducted in the spring and fall of 1977 yielded data from 895 secondary classes and from 20,157 students within these classes. The data obtained from the 113 class climate items subsequently were analyzed several different ways. Total, between and pooled within intercorrelation matrices were computed for all the classes and students and for classes and students at the high school and middle or junior high school levels. (It should be noted that of these 20,157 students many were present in more than one of the sampled classes and, therefore, were sampled more than once.)

The following chart will help clarify the various types of correlation matrices which can be analyzed and the samples over which they were computed.

<u>CORRELATION MATRIX TYPE</u>	<u>ALL</u>	<u>HIGH</u>	<u>JUNIOR/MIDDLE</u>
Total	Students (N=20,157)	Students (N=11,051)	Students (N=9,106)
Between	Classes (N=895)	Classes (N=526)	Classes (N=369)
Pooled within	Students (N=20,157)	Students (N=11,051)	Students (N=9,106)

The analytic and substantive implications for analysing these various matrices have been dealt with in detail elsewhere (Sirotnik, 1979).

Essentially, the approach used here is the same as that used in Sections 4 and 5. (A more detailed presentation for the class climate items can also be found in Sirotnik, Nides and Engstrom, 1980.) However, presenting the kind of detailed analyses and tabular results for 113 items as was done for 33 items in Section 4 is next to impossible. Instead, a summary of the basic trends which emerged will follow.

Factor analyses were computed first using orthogonal rotation and later using oblique rotation. Since the class climate dimensions were never thought to be entirely uncorrelated, the oblique solutions, as would be expected, turned out to be the most elucidating. They were used as a guide for interpreting the final dimensions along with cluster analysis results.

Since both measurement perspectives suggested by pooled within and between analyses are relevant to our study and each can yield quite different results, we explored the structures of all the correlation matrices noted above. However, given the many different substantive (and analytic) interests of the staff we necessarily focused our efforts on finding similarities between the various analyses. We eventually arrived at 18 dimensions (using 90 of the initial 113 items) which are similar for the between and pooled within analyses and appear to be useful for further analyses in the Study. These 18 class climate or learning environment scales are listed on the right side of Table 6.1 along with their alpha coefficients of internal consistency, computed at both the pooled within and between levels of analysis. (A complete list of items is given in Table 6.2.) Note that of the original 29 constructs, 14 (scales 1-14) remained pretty much intact while four "hybrids" emerged as new dimensions. In effect, several scales such as Rules and Regulations, Appropriate Practice, and Materials dropped out while scales such as Teacher Condensation, Teacher

Flexibility, and Student Freedom merged together forming a more complex construct.

Of course, the necessary expediency of finding common dimensions for the Study had the effect of minimizing the differences that obtain between the different units of analysis and the different schooling levels. Nonetheless, differences occur, are not trivial, and have the potential for interesting substantive interpretation. Although the pooled within and between analyses show small clusters approximating the 18 dimensions of our instrument, they also show larger clusters which differ in their grouping of these 18 dimensions.

Table 6.3 illustrates the differences in higher order clustering that obtain between the different schooling levels and units of analysis. The numbers inside the table are merely labels identifying eleven clusters which run more or less in common across the various analyses. For example, the pooled within analysis at the high school level shows a large composite dimension (cluster #1) consisting of Teacher Concern, Favoritism and Clarity, Student Satisfaction and Competitiveness, Classroom physical environment, and the instructional practices scales "Knowledge of results" and, partially, "Organization." (This corresponds to the same general "class affect" factor that emerges in a six-factor rotated solution of the pooled within high school correlation matrix.)

The most obvious generalizations that can be made are, first, that there are substantial differences between the within and between analyses and, next, that the two levels (high and junior high) are identical for the within analysis but differ greatly for the between. Apparently, secondary students as individuals may perceive the dynamics of classroom environment similarly, regardless of grade level. But at the classroom level, constructs emerging based upon average item perceptions can be quite different at the two schooling levels.

Briefly, it would appear from the between analyses that cluster 1 is basically the same for the high school and junior high school classes but the similarity ends with this cluster. The "highs" have another relatively large bipolar cluster containing most of the instructional practices items and the student satisfaction, student apathy and teacher clarity items. The remaining scales each form separate clusters. The "junior" analysis, by contrast, shows evidence of two relatively large clusters beyond the first. These two clusters, containing scales related to classroom instruction and student satisfaction respectively, appear to separate into clusters according to whether the items in the scales are positively or negatively worded. (See discussion at end of Section 1.)

Since many analyses will be conducted at the class level using class means on these scales, the following higher order clustering of the scales is recommended, based upon the cluster analysis of the between correlation matrix for the 18 scales over all secondary classes: (1) a more global scale of "Teacher affect" is obtained by combining the scales "Teacher concern," "Teacher authoritarianism," "Teacher punitiveness" and "Teacher enthusiasm" (2) a global "instructional practices" scale results from the combination of the scales "Teacher clarity," "Organization" and "Knowledge of results" (3) "Student satisfaction" should be dropped due to its high correlation with nearly every other scale and (4) all remaining scales can be used separately as they are.

Finally, the class climate items for upper elementary students represented only a sample of those for secondary. Except for the Teacher Concern, Peer Esteem and Teacher Punitiveness scales, only one or two items from the remaining a priori climate dimensions were included. For this reason, only these several dimensions were verified by factor/cluster

analyses; the remaining items have to be used singly in much the same way as any single survey-type items are used. Table 6.4 contains the items selected for assessing the upper elementary classroom learning environment.

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Table 6.1

A Priori and Rationally Derived
Learning Environment Constructs
With Item Examples and Alpha
Coefficients of Internal Consistency

A Priori Construct Titles	Sample Item ^a	Rationally Derived Construct Titles	Alpha Coefficients ^b		
			No. of Items	Pooled Within	Between
Teacher Concern	The teacher listens to me.	Teacher Concern	8	.85	.96
Teacher Punitiveness	The teacher punishes me unfairly.	Teacher Punitiveness	6	.74	.87
Peer Esteem	I like working with other students in this class.	Peer Esteem	7	.77	.89
Classroom Dissonance	Students in this class yell at each other.	Classroom Dissonance	3	.64	.93
Teacher Enthusiasm	This teacher seems to like being a teacher.	Teacher Enthusiasm	3	.62	.86
Teacher Favoritism	This teacher likes some students in this class better than others.	Teacher Favoritism	3	.61	.81
Teacher Clarity	The teacher gives clear directions.	Teacher Clarity	4	.65	.88
Student Competitiveness	There is a lot of competition in this class.	Student Competitiveness	4	.65	.83
Student Cliqueness	Certain students stick together in small groups.	Student Cliqueness	3	.47	.76
Student Satisfaction	Students feel good about what happens in this class.	Student Satisfaction	4	.69	.90
Student Compliance	The students in this class usually do the work assigned.	Student Compliance	4	.67	.85
Student Apathy	Students don't care about what goes on in this class.	Student Apathy	4	.49	.86

a. 4-point item response format used: strongly and mildly agree and disagree.

b. Pooled within and between alpha coefficients are computed using pooled within and between covariance matrices respectively. It can be shown mathematically that whenever class differences exists, between item correlations (and thus alpha coefficients) will always be greater than those for the pooled within analysis. In view of the conceptual differences in approach, this does not mean that between scales are necessarily "better than" pooled within scales.

Table 6.1 (Cont'd)

A Priori Construct Titles	Sample Item	Rationally Derived Construct Titles	No. of Items	Alpha Coefficients	
				Pooled Within	Between
Classroom Physical Appearance	I like the way this classroom looks.	Classroom Physical Appearance	2	.62	.86
Knowledge of Results	The teacher tells us how to correct the mistakes in our work.	Knowledge of Results	4	.71	.90
Task Difficulty	Some of the things the teacher wants us to learn are just too hard.	Task Difficulty	4	.62	.83
Time (Pacing/Speed)	The teacher gives me too much work to do in this class.				
Teacher Condensation	This teacher treats us like children.	Teacher Authoritarianism	8	.78	.95
Teacher Flexibility	This teacher will never admit when he/she is wrong.				
Student Freedom	We don't feel like we have any freedom in this class.				
Student Decision-Making	Students help decide what we do in this class.	Student Decision-Making	8	.64	.88
Individualization	Different students can do different things in this class.				
Organization	Things are well planned in this class.	Organization	11	.76	.91
Perceived Purpose	Our teacher gives us good reasons for learning in this class.				
Goals and Objectives	Students know the goals of this class.				
Grading	The grades or marks I get in this class have nothing to do with what I really know.				
Teacher Task Behavior	We know exactly what we have to get done in this class.				

Table 6.1 (Con't)

<u>A Priori Construct Titles</u>	<u>Sample Item</u>	<u>Rationally Derived Construct Titles</u>	<u>No. of Items</u>	<u>Alpha Coefficients</u>	
				<u>Pooled Within</u>	<u>Between</u>
Rules and Regulations	Everyone in this class knows what we may or may not do.	These items did not produce, or fit into, any rationally derived constructs.			
Appropriate Practice	We get to practice what we learn in this class.				
Materials	I can always find books or materials in this class that are interesting to me.				

Table 6.2

Rationally Derived Scales
for the Classroom Learning Environment
as Perceived by Secondary Students

Teacher Concern (8)

1. The teacher makes this class enjoyable for me.
4. The teacher listens to me.
13. The teacher lets me express my feelings.
14. I like the teacher in this class.
- 17. I wish I had a different teacher for this class.
21. I feel the teacher is honest with me.
22. This teacher is friendly.
24. The teacher is fair to me.

Teacher Punitiveness (6)

2. The teacher makes fun of some students.
6. This teacher hurts my feelings.
7. I'm afraid of this teacher.
9. The teacher punishes me unfairly.
11. The teacher makes fun of me.
16. The teacher gets mad when I ask a question.

Teacher Authoritarianism (8)

19. This teacher is too strict.
45. This teacher treats us like children.
49. This teacher will never admit when he/she is wrong.
56. We don't feel like we have any freedom in this class.
64. This teacher acts like he/she is better than we are.
69. This teacher "talks down" to us.
75. This teacher never changes his/her mind about anything.
82. I don't feel like I have any freedom in this class.

Teacher Favoritism (3)

47. The teacher likes some students in this class better than others.
- 50. The teacher has no favorites in this class.
77. The teacher treats smart students in this class better than others.

Teacher Enthusiasm (3)

- 38. This teacher seems to like being a teacher.
- 51. This teacher seems to enjoy what he/she is teaching
- 60. The teacher seems bored in this classroom.

Peer Esteem (7)

- 3. I help my classmates with their work.
- 8. If I am absent, my classmates help me to catch up on what I missed.
- 10. I like my classmates.
- 12. I like working with other students in this class.
- 15. In this class, people care about me.
- 18. If I had trouble with my work, most of my classmates would help me.
- 20. My classmates like me.

Student Decision-Making (8)

- 32. We are free to talk in this class about anything we want.
- 35. Students help make the rules for this class.
- 37. We are free to work with anyone we want to in this class.
- 40. We can decide what we want to learn in this class.
- 74. Students help decide what we do in this class.
- 80. Different students can do different things in this class.
- 91. Sometimes I can study or do things I am interested in even if they are different from what other students are studying or doing.
- 97. I help decide what I do in this class.

Classroom Dissonance (3)

- 41. The students in this class fight with each other.
- 54. The students in this class argue with each other.
- 107. Students in this class yell at each other.

Student Competitiveness (4)

- 48. There is a lot of competition in this class.
- 65. In this class, students compete with each other for good grades.
- 86. When I'm in this class, I feel I have to do better than other students.
- 90. Students in this class feel they have to do better than each other.

Student Cliqueness (3)

- 36. Some groups of students refuse to mix with the rest of the class.
- 68. Certain students stick together in small groups.
- 105. When we work in small groups, many students work only with their close friends.

Teacher Clarity (4)

- 62. The teacher uses words I can understand.
- 63. The teacher gives clear directions.
- 95. The students understand what the teacher is talking about.
- 109. I understand what the teacher is talking about.

Student Satisfaction (4)

- 96. Students feel good about what happens in class.
- 101. I don't like coming to this class.
- 108. After class, I usually have a sense of satisfaction.
- 112. I feel good about what happens in this class.

Student Compliance (4)

- 53. I usually do my homework.
- 87. I usually do the work assigned in this class.
- 94. The students in this class usually do the work assigned.
- 104. I usually do everything my teacher tells me to do.

Student Apathy (4)

- 29. Failing in this class would not bother most of the students.
- 33. Most of the students pay attention to the teacher.
- 34. Students don't care about what goes on in this class.
- 67. I don't care about what goes on in this class.

Classroom Physical Appearance (2)

- 70. The room is bright and comfortable.
- 111. I like the way this classroom looks.

Instructional Practices: Knowledge of Results (4)

- 30. The teacher tells us how to correct the mistakes in our work.
- 42. The teacher tells me how to correct the mistakes in my work.
- 43. This teacher lets us know when we have not learned something well.
- 61. We know when we have learned things correctly.

Instructional Practices: Task Difficulty (4)

- 44. I do not have enough time to do my work for this class.
- 66. Some of the things the teacher wants us to learn are just too hard.
- 73. I have trouble reading the books and other materials in this class.
- 92. The teacher gives me too much work to do in this class.

Instructional Practices: Organization (11)

- 28. We know exactly what we have to get done in this class.
- 52. We know why the things we are learning in this class are important.
- 57. The grades or marks I get in this class help me to learn better.
- 58. We don't know what the teacher is trying to get us to learn in this class.
- 72. Many students don't know what they're supposed to be doing during class.
- 76. This class is disorganized.
- 78. The grades or marks I get in this class have nothing to do with what I really know.
- 79. We have to learn things without knowing why.
- 93. Students know the goals of this class.
- 106. Things are well planned in this class.
- 113. Our teacher gives us good reasons for learning in this class.

ITEMS NOT INCLUDED IN SCALES

(Secondary)

A priori Dimension

Peer Esteem	5. Students in this class are unfriendly to me.
Student Hurt (T. Punitive)	23. I feel left out of class activities.
Rules and Regulations	25. In this class, there is a strict set of rules for students to follow.
Goals and Objectives	26. This teacher tells us ahead of time what we are going to be learning about.
Physical Environment	27. This classroom is too crowded.
Teacher Task Behavior	31. This teacher makes sure I finish my work.
Individualization	39. I have to do the work the teacher assigns, even if I already know how to do it.
Rules and Regulations	46. Everyone in this class knows what we may or may not do.
Teacher Flexibility	55. The teacher is willing to try different ways of doing things.
Student Decision-Making	59. I would like to be able to make more decisions about what goes on in this class.
Materials	71. The books and other learning materials we use in this class are not very interesting.
Appropriate Practice	81. We do things over and over until we learn them.
Grading	83. The grades or marks I get in this class are fair.
Materials	84. I can always find books or materials in this class that are interesting to me.
Appropriate Practice	85. We get to practice what we learn in this class.
Appropriate Practice	88. We forget things we've been taught in this class because we don't practice them enough.
Teacher Task Behavior	89. There is always work to do in this class.
Materials	98. There are not enough books or materials for everyone in this class to use.

ITEMS NOT INCLUDED IN SCALES - CONT'D.

A Priori
Dimension

Teacher Task Behavior

99. Our teacher makes sure we finish our work.

Appropriate Practice

100. I get to practice what I learn in this class.

Rules and Regulations

102. We don't have too many rules in this class.

Time (pacing/speed)

103. There are times when I have nothing to do in this class, and there are times when I have too much to do.

Individualization

110. We all have to finish our work in the same amount of time.

Table 6.3

Higher Order Clustering Tendencies
Among the Items of the 18 Learning Environment Scales^a

		Teacher Concern	Teacher Enthusiasm	Teacher Punitiveness	Teacher Authoritarianism	Teacher Favoritism	Teacher Clarity	Knowledge of Results	Student Satisfaction	Classroom Physical Appearance	Student Compliance	Organization	Task Difficulty	Classroom Discipline	Student Cliquesness	Peer Esteem	Student Decision-Making	Student Competitiveness	
Pooled Within	Senior High School Students	1	1	2	2	2	1	1	1	1	1	1/2	2	2	3	3	4	5	6
	Junior High School Students	1	1	2	2	2	1	1	1	1	1	1/2	2	2	3	3	4	5	6
Between	Senior High School Classes	1	1	-1	1	7	2	2	2	11	8	2	2	9	3	10	4	5	6
	Junior High School Classes	1	1	1/3	1	3	2	1	2	2	2	3	3	3	3	6	4	5	5

- a. Reading across indicates which scales form the larger clusters, as numbered inside the table. Scales with two numbers (e.g., 1/3) have items which split into two different clusters.

Table 6.4

Items for Assessing the Classroom Learning Environment
as Perceived by Upper Elementary Students

Teacher Concern (Alpha = .80)

- 1. My teacher listens to me.
- 5. My teacher makes the class fun for me.
- 9. My teacher is friendly.
- 12. I like the teacher in this class.
- 14. I wish I had a different teacher for this class.

Peer Esteem (Alpha = .65)

- 2. Students in this class are unfriendly to me.
- 4. I like working with other students in this class.
- 6. I like my classmates.
- 8. In this class, people care about me.
- 10. My classmates like me.

Teacher Punitiveness (Alpha = .64)

- 3. My teacher hurts my feelings.
- 7. I'm afraid of my teacher.
- 11. My teacher gets mad when I ask a question.
- 13. My teacher makes fun of me.
- 15. My teacher punishes me unfairly.

ITEMS NOT INCLUDED IN SCALES
(Upper Elementary)

A priori
Dimension

Rules and Regulations

16. We don't have too many rules in this class.

Physical Environment

17. I like the way this classroom looks.

Student Decision-Making

18. We can choose what we want to learn in this class.

Teacher Favoritism

19. The teacher likes some students in this class better than others.

Student Cliqueness

20. When we work in small groups, many students work only with their close friends.

Difficulty

21. I have trouble reading the books and other materials in this class.

Student Satisfaction

22. I feel good about what happens in this class.

Organization

23. Many students don't know what they're supposed to be doing during class.

Student Apathy

24. Students don't care about what goes on in this class.

Student Decision-Making

25. I would like more chances to help choose what we do in this class.

Student Competitiveness

26. When I'm in this class, I feel I have to do better than other students.

Teacher Clarity

27. Our teacher gives clear directions.

Teacher Flexibility

28. Our teacher never changes his/her mind about anything.

Appropriate Practice

29. I forget things I've been taught in this class because I don't practice them enough.

Teacher Condensation

30. Our teacher treats us like babies.

Teacher Enthusiasm

31. Our teacher has fun teaching this class.

Time (Pacing/Speed)	32. I do not have enough time to do my work for this class.
Teacher Task Behavior	33. Our teacher makes sure we finish our work.
Student Decision-Making	34. Students help decide what we do in this class.
Student Compliance	35. I do all the work my teacher gives me.
Goals and Objectives	36. Our teacher tells us ahead of time what we are going to be learning about.
Knowledge of Results	37. If I do my work wrong, my teacher tells me how to do it right.
Student Freedom	38. We don't feel like we have any freedom in this class.
Classroom Dissonance	39. Students in this class yell at each other.
Perceived Purpose	40. We have to learn things without knowing why.
Grading	41. The grades or marks I get in this class are fair.
Materials	42. There are not enough books or materials for everyone in this class to use.
Individualization	43. I have to do the work the teacher gives us, even if I already know how to do it.